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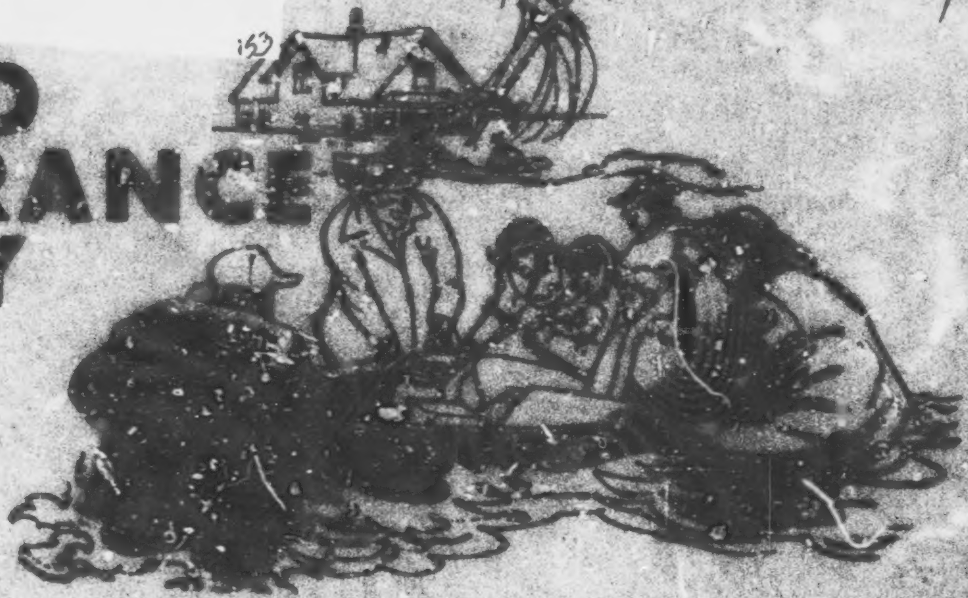
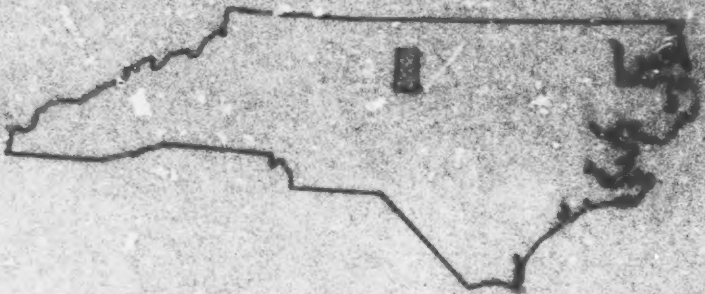


FLOOD INSURANCE STUDY

ALAMANCE COUNTY
NORTH CAROLINA
(UNINCORPORATED AREAS)

ORIGINAL



REVISED:
APRIL 3, 1987

Federal Emergency Management Agency

COMMUNITY NUMBER - 370001

Cooke

NOTICE TO
FLOOD INSURANCE STUDY USERS

Individual components of this Flood Insurance Study (i.e., text, tables, profiles, and maps) are subject to revision as additional data become available. Because revised components may be issued separately, study users should consult the community map repository for those components that are currently effective.

In cases where this Flood Insurance Study and any components thereof warrant revision, a Revisions Description section may be incorporated into this text. When applicable, study users should refer to the Revisions Description to obtain pertinent data and information concerning revisions.

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PUBLISHED SEPARATELY:

Flood Insurance Rate Map

FLOOD INSURANCE STUDY
UNINCORPORATED AREAS OF ALAMANCE COUNTY, NORTH CAROLINA

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the unincorporated areas of Alamance County, North Carolina, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study will be used to convert Alamance County to the regular program of flood insurance by the Federal Emergency Management Agency (FEMA). Local and regional planners will use this study in their efforts to promote sound flood plain management.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these Federally-supported studies are based. These criteria take precedence over the minimum Federal criteria for purposes of regulating development in the flood plain, as set forth in the Code of Federal Regulations at 24 CFR, 1910.1 (d). In such cases, however, it shall be understood that the state (or other jurisdictional agency) shall be able to explain these requirements and criteria.

1.2 Authority and Acknowledgments

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

The hydrologic and hydraulic analyses for this study were performed by the U.S. Army Corps of Engineers, Wilmington District (COE), for the Federal Emergency Management Agency, under Interagency Agreement No. IAA-H-18-78, Project Order No. 11. This study was completed in October 1979.

1.3 Coordination

The North Carolina Department of Natural Resources and Community Development (State Coordination Agency), county officials, and locat residents were notified of the initiation of the study and requested to furnsh flood hazard data. Information was also requested from the U.S. Soil Conservation Service (SCS), the National Oceanic and Atmospheric Administration, the U.S. Geological Survey (USGS), and private contractors for FEMA. The SCS furnished cross-section data on several streams included in the study.

An initial coordination meeting was held between the COE, FEMA, county officials, and local residents on December 13, 1977, to inform the community of the nature and purpose of the Flood Insurance Study, to solicit community input, and to identify streams requiring detailed study. An additional coordination meeting was held by the COE on August 11, 1978. A final coordination meeting held by COE on January 20, 1981, to review the report with county officials.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the unincorporated areas of Alamance County, North Carolina. The area of study is shown on the Vicinity Map (Figure 1).

The Haw River, Big Alamance Creek, Haw Creek, East Back Creek, Reedy Fork, and their significant tributaries were studied in detail. Flooding along less developed Cane and Stinking Quarter Creeks was studied by approximate methods. In all, segments of 20 streams were studied in detail and 4 by approximate methods.

The areas studied by detailed methods were selected with priority given to all known flood hazard areas, and areas of projected development or proposed construction for the next five years, through 1984.

Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to and agreed upon by FEMA, COE, and county officials.

2.2 Community Description

Alamance County is located in the North Central Piedmont region of North Carolina, 45 miles northwest of Raleigh and 25 miles east of Greensboro. It includes the Cities of Burlington and Graham and Towns of Gibsonville, Elon College, Mebane, and Haw River.

Pioneers from Pennsylvania and other northern colonies began settling the Alamance County region about 1740. Alamance County was a part of Orange County until 1849, when residents voted to form the new county. In 1850, the North Carolina Railroad ran a line from Goldsboro to Charlotte which passed through central Alamance County. Although Graham was originally planned to house the railroad repair facilities, the town refused and the railroad located them 2 miles to the west. These repair facilities, then known as Company Shops, were the origin of the City of Burlington. Textiles gradually replaced the railroad as the county's major industry and, by 1890, were firmly established. Alamance County is heavily industrialized and manufactures textiles, chemicals, electronics, plastics, machinery, BLANK

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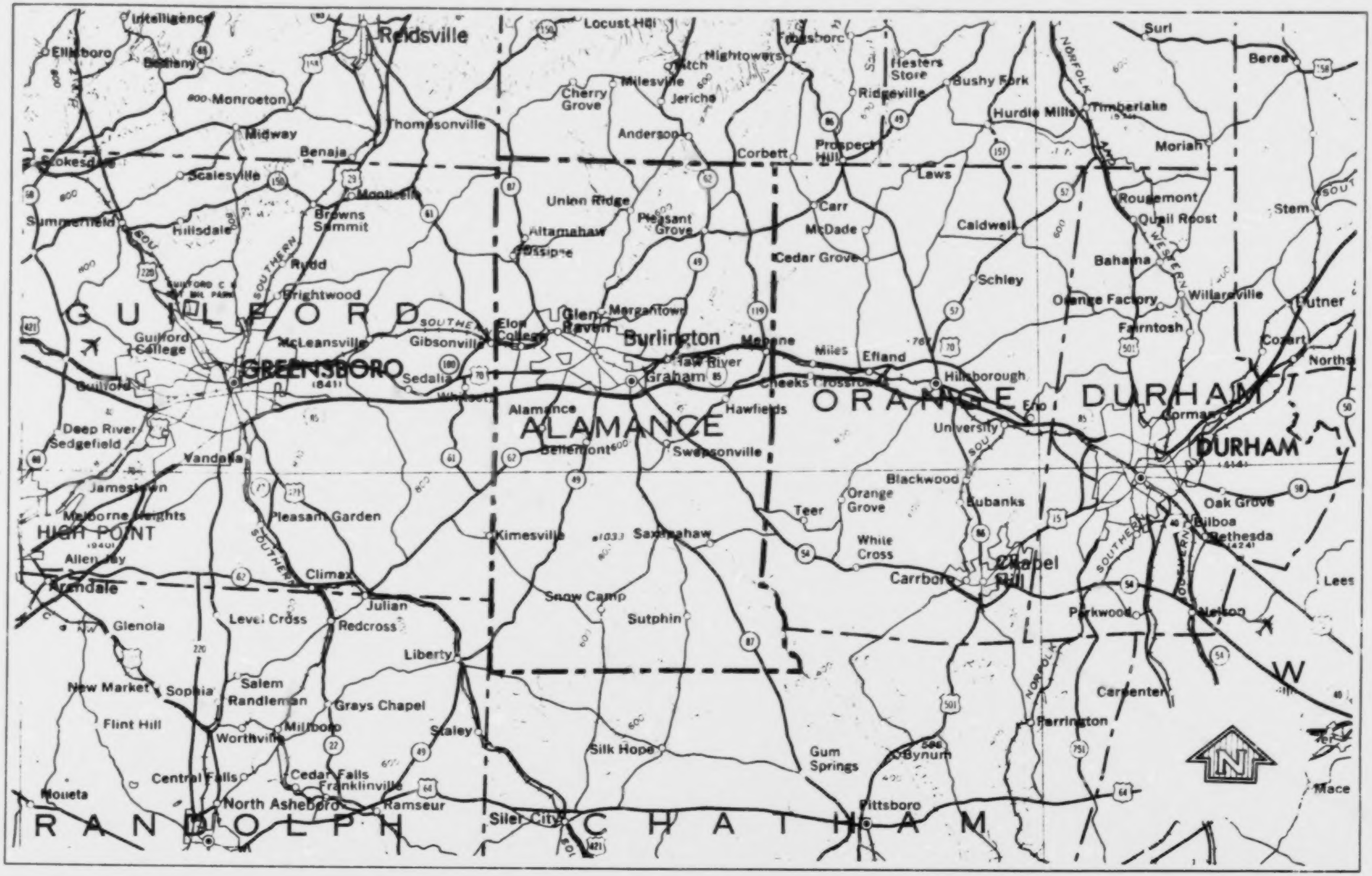
GUILFORD
ALAMANCE
ORANGE
DURHAM
RANDOLPH
CHATHAM
Reidsville
Greensboro
(841)
High Point
(940)
Burlington
Graham
Durham
(614)
Chapel Hill
Carrboro
Hillsborough
Mebane
Elon College
Glen Raven
Haw River
Gibsonville
Siler City
Pittsboro
Liberty
Julian
Climax
Sedalia
McLeansville
Whitsett
Snow Camp
Saxapahaw
Swepsonville
Kimesville
Bellemont
Alamance
Hawfields
Efland
Ruffin
Intelligence
Ellisboro
Monroeton
Midway
Thompsonville
Stokesdale
Summerfield
Browns Summit
Rudd
Brightwood
Guilford College
Guilford
Deep River
Sedgefield
Jamestown
Vandalia
Pleasant Garden
Allen Jay
Archdale
Glenola
Level Cross
Redcross
New Market
Sophia
Randleman
Grays Chapel
Worthville
Millboro
Flint Hill
Central Falls
Cedar Falls
Franklinville
Ramseur
Staley
North Asheboro
Silk Hope
Sutphin
Locust Hill
Cherry Grove
Milesville
Jericho
Anderson
Union Ridge
Altamahaw
Ossipee
Pleasant Grove
Morgantown
Corbett
Prospect Hill
Hightowers
Hesters Store
Ridgeville
Bushy Fork
Hurdle Mills
Timberlake
Moriah
Laws
Carr
McDade
Cedar Grove
Caldwell
Schley
Rougemont
Quail Roost
Bahama
Orange Factory
Willardville
Farntosh
Butner
Berea
Surl
Stem
Cozart
Cheeks Crossroads
University
Eno
Blackwood
Orange Grove
Teer
White Cross
Eubanks
Oak Grove
Bilboa
Bethesda
Parkwood
Nelson
Carpenter
Farrington
Bynum
Gum Springs
Mace
Lees
N
SOUTHERN
NORFOLK

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

APPROXIMATE SCALE

8 0 8 16 24 MILES

VICINITY MAP

and packaging. The county has an estimated population of 98,000 with about 44,000 living in the unincorporated areas (Reference 1).

The county lies entirely within the Haw River Basin, one of the major components of the Cape Fear River Basin. The Haw River crosses the county from northwest to southeast. Reedy Fork, Big Alamance Creek, Stony Creek, and East Back Creek are the largest tributaries. The topography is characterized by moderately rolling hills and narrow stream valleys. Elevations range from 480 feet above National Geodetic Vertical Datum of 1929 (NGVD) along the Haw River to 970 feet NGVD on the top of Cane Creek Mountain. Soils are predominantly deep, well drained, brown to red, silty or sandy loam over red clay subsoils of the Georgeville, Herndon, Appling, Enon, and Lloyd types (Reference 2). Much of the county is devoted to agriculture, pasture, or woodlands. The main crops are soybeans, corn, tobacco, and hay, and the principal trees are species of oak, hickory, maple, ash, gum, and pine. Alamance County has a mild climate with an average annual temperature of 60 degrees F and an average annual rainfall of 45 inches (Reference 3).

Development is occurring mainly in the incorporated communities and their areas of extraterritorial jurisdiction.

2.3 Principal Flood Problems

Low-lying areas of Alamance County flood periodically from the Haw River, Big Alamance Creek, Haw Creek, Gunn Creek, Reedy Fork and other streams included in this study. Flooding on the larger streams results primarily from tropical storms and major weather fronts, while flooding on the smaller streams is due mainly to local thunderstorms.

The USGS has operated six stream gages in the vicinity of Alamance County. Data from these gages are presented in Table 1. Floods in the county occurred in 1908, 1945, 1947, 1954, 1967, and 1972. The September 1945 flood is the maximum flood of record on the Haw River and approximates the 70-year flood. The October 1954 flood on Gunn Creek approximated a 20-year flood, while the September 1947 flood on Reedy Fork exceeded the 100-year flood. The most recent flood occurred in June 1972 and approximated the 20-year flood on the upper Haw River and the 50-year flood on Reedy Fork.

2.4 Flood Protection Measures

There are no existing or anticipated flood control projects that will provide flood protection for Alamance County. Based on information contained in this Flood Insurance Study, flood plain regulations will be implemented by the county to preclude extensive flood damage to future development.

TABLE 1
Stream Gaging Stations

Station Number	Stream Name and Location	Drainage Area (sq. mi.)	Period of Record	Maximum Discharge (c.f.s.)	Date of Maximum Discharge	Recurrence Interval
02093549	Haw River at Altamahaw	188	1968-1973	6,900	21 Jun 72	20-yr.
02094500	Reedy Fork near Gibsonville	133	1929-1978	11,600	25 Sep 47	300-yr.
02096000	Stony Creek near Burlington	44.2	1953-1959	2,480	1 Feb 57	10-yr.
02096500	Haw River at Haw Creek	599	1929-1978	37,000	18 Sep 45	70-yr.
07096700	Big Alamance Creek Near Elon College	116	1958-1978	6,250	6 Jan 62	10-yr.
02096740	Gunn Creek near Alamance	5.0	1954-1973	1,590	15 Oct 54	20-yr.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, and 500-year period (recurrence intervals), have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than one year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (one percent chance of annual occurrence) in any 50 year period is about 40 percent (four in 10), and for any 90 year period, the risk increases to about 60 percent (six in 10). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail in the community.

Peak discharge-frequency relationships for tributary streams were based on a Log-Pearson Type III Method (Reference 4) regional study of 52 gages with lengths of record ranging from 10 to 50 years (Reference 5). These gages monitor drainage areas of less than 200 square miles in Piedmont North Carolina. For urban streams, the discharges were adjusted to account for existing urbanization in the watershed using a method developed by

Putnam (Reference 6). Also, on some streams, discharges were modified by flood routing procedures to reflect storage effects of reservoirs.

Since 1929, the USGS has operated a stream gage on the Haw River at U.S. 70 just east of Burlington. For the Haw River, discharges were based on an analysis of the gage record in conjunction with an unpublished COE study of the Upper Cape Fear basin.

Peak discharges were calculated at various locations for the 10-, 50-, 100-, and 500-year frequency floods. The peak discharge-drainage area relationships for the selected recurrence intervals are present in Table 2, "Summary of Discharges".

TABLE 2 - SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)			
		10-YEAR	50-YEAR	100-YEAR	500-YEAR
HAW RIVER					
At Saxapahaw	1,090	35,000	56,000	67,000	103,000
Below Big Alamance Creek	960	33,000	52,000	63,000	97,000
Above Big Alamance Creek	680	24,000	39,000	48,000	77,000
USGS gage at Haw Creek	599	21,000	34,500	43,000	70,000
Below Reedy Fork	450	14,500	26,000	33,500	58,000
State Highway 87 at Altamahaw	188	4,900	11,000	15,000	31,500
Guilford County line	184	4,800	10,700	14,600	31,000
STONY CREEK					
At mouth	102.7	7,000	12,800	15,700	24,800
At State Highway 62	91.5	6,500	11,600	14,400	23,000
Below Jordan Creek	87.3	6,200	11,100	13,800	22,100
Above Jordan Creek	61.8	4,750	8,500	10,600	17,500
Below Lake Burlington Dam	44.3	3,590	6,400	8,120	13,460
EAST BACK CREEK[1]					
At mouth	81.2	6,000	10,800	13,300	22,000
At State Highway 1198	76.2	5,610	10,200	12,540	20,600
Below McAdmas Creek	72.9	5,450	10,000	12,000	20,000
At Graham Lake Dam	67.6	5,180	9,490	11,560	18,950
Above Quaker Creek	48.8	4,560	8,240	10,400	16,470
Below Mill Creek	46.6	4,420	8,000	10,100	16,000

BIG ALAMANCE CREEK					
At mouth	260.8	14,516	24,910	30,803	48,393
Above Little Alamance Creek	242.7	13,650	23,790	29,215	46,275
Above Stinking Quarter Creek	158.7	10,320	18,110	22,460	35,530
Above Gunn Creek	146.8	9,805	17,225	21,375	33,850
Below West Back Creek	142.7	9,620	16,915	20,990	33,260
STINKING QUARTER CREEK					
At mouth	82.8	6,725	11,925	14,850	23,710
Below Rock Creek	80.5	6,600	11,715	14,590	23,300
ROCK CREEK					
At mouth	14.4	2,125	3,880	4,885	7,990
Above Tributary at Station 18,700	11.9	1,870	3,430	4,320	7,085
At State Highway 1130	10.8	1,755	3,225	4,065	6,575
GUNN CREEK[2]					
At mouth	7.8	1,660	2,720	3,290	5,430
At Burlington limits	7.1	1,620	2,550	3,100	5,130
LITTLE ALAMANCE CREEK[2]					
Above Boyd Branch	10.7	2,510	3,900	4,480	6,750
At State Highway 49	9.4	2,380	3,670	4,200	6,250
MILL CREEK[1]					
At mouth	13.0	1,850	3,350	4,310	7,000
At Mebane extraterritorial limit	11.5	1,680	3,100	3,900	6,500
MCADAMS CREEK[2]					
At mouth	5.0	1,120	1,960	2,480	4,110
Above Tributary, 1 mi. upstream of mouth	3.8	1,040	1,800	2,200	3,500
At State Highway 1940	3.2	970	1,680	2,040	3,180
Above Tributary just downstream of Mebane limits	2.4	870	1,500	1,810	2,750

HAW CREEK					
At mouth	27.2	3,225	5,830	7,305	11,850
At State Highway 2153	22.4	2,840	5,145	6,455	10,500
Below Tributary 1,300' downstream of State Highway 2135	21.0	2,720	4,945	6,210	10,100
Below Tributary "A"	13.2	2,000	3,660	4,610	7,550
Above Tributary "A"	7.6	1,400	2,585	3,260	5,385
At State Highway 1007	4.8	1,025	1,910	2,415	4,015
Above Tributary, 500' upstream of State Highway 1007[2]	2.5	740	1,360	1,620	2,730
At I-85[2]	2.0	660	1,200	1,460	2,390
TRIBUTARY A TO HAW CREEK					
At mouth	5.5	1,125	2,090	2,645	4,390
At State Highway 2131	4.9	1,045	1,945	2,460	4,090
BOYDS CREEK					
At mouth	7.4	1,365	2,520	3,185	5,255
At State Highway 1737	6.5	1,260	2,335	2,950	4,880
Above Tributary at Station 5720	4.6	1,000	1,865	2,365	3,930
Upper study limit	2.5	670	1,255	1,600	2,680
WEST BACK CREEK					
At mouth	13.7	2,055	3,765	4,735	7,755
At State Highway 1149	12.4	1,925	3,525	4,440	7,275
Above Tributary "A"	11.3	1,805	3,315	4,175	6,855
At I-85	9.3	1,600	2,940	3,705	6,100
WEST BACK CREEK TRIBUTARY					
At mouth	1.1	395	755	965	1,640
At State Highway 1301	0.6	245	475	610	1,050
DRY CREEK[2]					
At mouth	4.1	1,080	1,850	2,200	3,630
Below Tributary, 2,00' upstream of State Highway 1529	3.2	930	1,600	1,910	3,100
Above Tributary	2.6	850	1,480	1,790	2,760
At upper study limit	2.2	800	1,400	1,690	2,590

TICKLE CREEK					
AT mouth	4.2	940	1,755	2,225	3,705
At State Highway 1504	3.9	890	1,665	2,110	3,515
At State Highway 1500	2.8	720	1,355	1,720	2,875
At Guilford County line	2.1	585	1,110	1,415	2,375
TRAVIS CREEK					
At mouth	15.7	2,245	4,095	5,155	8,420
Below Tickle Creek	13.2	2,005	3,670	4,620	7,565
Above Tickle Creek	9.0	1,560	2,870	3,625	5,965
Above Tributary 150' upstream of State Highway 1504	6.9	1,300	2,410	3,045	5,030
At State Highway 1500	4.0	905	1,690	2,145	3,572
Guilford County line	2.3	625	1,180	1,500	2,515
TRIBUTARY "A" TO TRAVIS CREEK					
At mouth	1.5	480	915	1,170	1,970
At Guilford County line	1.4	455	870	1,110	1,875
REEDY FORK[2]					
At mouth	253	9,270	15,665	21,185	36,475
At Guilford County line	250	9,050	15,350	20,750	35,200

[1] Discharges adjusted to account for urbanization.
[2] Discharges modified by storage.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the flooding sources studied in detail in Alamance County were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each of the flood sources.

Cross-section data for streams and elevation data and structural geometry of bridges and culverts were obtained from field surveys. Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). Cross-section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 3).

Water-surface elevations for the 10-, 50-, 100-, and 500-year floods were developed using the COE HEC-2 Computer Step-Backwater Model (Reference 7). Flood profiles for Haw River were started downstream of Alamance County and run continuously through the study area. Starting water-surface elevations for other streams were determined by the slope-area method.

Roughness coefficients (Manning's "n") were determined from field inspection and are summarized for each stream in Table 3, "Range of Roughness Coefficients."

TABLE 3
Range of Roughness Coefficients
(Manning's "n")

Stream Name	Channel	Overbanks
Haw River	0.06-0.065	0.12
Haw Creek	0.04-0.06	0.09-0.12
Tributary to Haw Creek	0.06	0.08-0.09
Big Alamance Creek	0.055	0.08-0.11
Little Alamance Creek	0.05-0.06	0.07-0.11
Stinking Quarter Creek	0.05-0.06	0.07-0.11
Rock Creek	0.05	0.09-0.11
Gunn Creek	0.05	0.09-0.11
West Back Creek	0.05	0.09-0.11
West Back Creek Tributary	0.05	0.08-0.11
East Back Creek	0.04-0.05	0.07-0.11
McAdams Creek	0.03-0.05	0.08-0.13
Mill Creek	0.04-0.06	0.07-0.15
Boyds Creek	0.05-0.06	0.08-0.12
Stony Creek	0.03-0.06	0.08-0.12
Dry Creek	0.03-0.05	0.08-0.12
Travis Creek	0.06	0.09-0.12
Tickle Creek	0.04-0.065	0.08-0.11
Tributary A to Travis Creek	0.06	0.10-0.11
Reedy Fork	0.06	0.08-0.12

Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals (Exhibit 1). All elevations used in this study are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in the study are shown and described on the maps.

The approximate 100-year flood plains were determined using unpublished regional flood height-drainage area-frequency relations for the Piedmont Section of North Carolina furnished by the USGS.

Several small reservoirs in the study area are subject to overtopping during floods. However, it is concluded that, while short-duration, shallow overflows might result in erosion of dams and abutments, rapid failure of the dams during flood would be unlikely. The probability of dam failure from floods greater than the 500-year or the consequences of dam failures in series is beyond the scope of this study.

The hydraulic analyses for this study were based on unobstructed flow conditions. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail during floods.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages state and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by FEMA as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100- and the 500-year floods have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using Alamance County topographic maps at a scale of 1" = 400', with a contour interval of 5 feet (Reference 8). In cases where the 100- and the 500-year flood boundaries are close together, only the 100-year boundary has been shown.

The boundaries of the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map. Small areas within the flood boundaries may lie above the flood elevations, and, therefore, may not be subject to flooding. Owing to limitations of the map scale and/or lack of detailed topographic data, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood may be carried without substantial increases in flood heights. Minimum standards of FEMA limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this report are presented to local agencies as minimum standards that can be adopted or that can be used as a basis for additional studies.

Floodways were computed on the basis of equal conveyance reduction from each side of the flood plain. The results of these computations were tabulated at selected cross sections on each stream studied (Table 4).

Floodway boundaries shown on the Flood Boundary and Floodway Map were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the floodway and the 100-year flood boundaries are close together, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Haw River								
A	121,150	525/170[2]	13,353	5.5	406.4	406.4	407.1	0.7
B	130,700	560/395[2]	12,561	5.7	415.4	415.4	416.2	0.8
C	138,258	620/380[2]	14,120	5.1	425.3	425.3	426.2	0.9
D	144,742	690	17,490	4.1	429.8	429.8	430.8	1.0
E	158,576	600	14,656	4.4	438.5	438.5	439.5	1.0
F	167,390	790	17,856	3.6	443.4	443.4	444.2	0.8
G	168,850	845	14,080	4.6	456.0	456.0	456.0	0.0
H	181,280	650	14,624	4.4	468.2	468.2	468.8	0.6
I	189,517	770	16,438	3.8	473.9	473.9	474.9	1.0
J	194,210	650	13,520	4.6	477.8	477.8	478.5	0.7
K	197,160	650	13,106	4.8	480.1	480.1	480.9	0.8
L	200,260	710	12,260	4.0	482.8	482.8	483.6	0.8
M	206,740	500	8,100	6.1	490.0	490.0	490.9	0.9
N	210,624	500/125[2]	9,817	4.4	496.4	496.4	497.2	0.8
O	213,880	700/415[2]	12,859	3.3	498.7	498.7	499.4	0.7
P	218,996	550/235[2]	11,862	3.6	503.5	503.5	504.1	0.6
Q	222,080	500	12,311	3.5	504.3	504.3	505.0	0.7
R	232,775	390/165[2]	8,340	5.2	509.8	509.8	510.8	1.0
S	234,860	550/340[2]	10,753	4.0	511.7	511.7	512.7	1.0
T	241,000	440/300[2]	7,502	5.7	519.0	519.0	519.8	0.8
U	245,011	430/100[2]	5,790	6.1	530.8	530.8	531.3	0.5

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[1] Feet above mouth.

[2] Total width/width within unincorporated areas.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

HAW RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Haw River (cont.)								
V	247,970	450	8,996	3.9	535.0	535.0	535.4	0.4
W	252,271	340	5,060	7.0	543.9	543.9	544.1	0.2
X	254,210	465	5,329	6.7	549.2	549.2	549.2	0.0
Y	259,900	470	6,503	5.5	567.0	567.0	567.3	0.3
Z	264,120	410	7,140	5.0	572.9	572.9	573.3	0.4
AA	276,430	430	8,995	3.8	586.0	586.0	587.0	1.0
AB	280,310	360	8,015	4.1	588.6	588.6	589.6	1.0
AC	282,265	320	7,066	4.6	590.3	590.3	591.2	0.9
AD	287,480	435	7,798	4.2	594.7	594.7	595.5	0.8
AE	292,350	275	3,610	4.2	599.7	599.7	600.6	0.9
AF	295,103	255	3,681	4.1	604.5	604.5	605.1	0.6
AG	298,000	305	2,899	5.0	616.2	616.2	616.2	0.0
AH	300,000	335	4,337	3.4	619.9	619.9	620.1	0.2
Haw Creek								
A	1,550	210	1,971	3.7	473.2	465.2[2]	465.5[2]	0.3
B	2,750	320	3,133	2.3	473.2	467.4[2]	467.8[2]	0.4
C	4,500	250	2,648	2.8	473.2	468.8[2]	469.6[2]	0.8
D	5,470	200	1,852	3.9	473.2	470.3[2]	470.9[2]	0.6
E	7,760	335	4,167	1.7	473.8	473.8	474.4	0.6
F	10,525	250	2,834	2.5	476.4	476.4	477.0	0.6

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORTED AREAS)

FLOODWAY DATA

HAW RIVER-HAW CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Haw Creek (con't)								
G	13,480	200	2,185	3.3	479.4	479.4	480.2	0.8
H	14,700	180	2,072	3.5	481.2	481.2	481.7	0.5
I	17,580	180	2,272	3.2	484.1	484.1	484.5	0.4
J	19,260	185	1,720	4.2	486.1	486.1	486.7	0.6
K	19,640	230	3,467	2.1	486.9	486.9	487.4	0.5
L	20,300	148	1,222	4.8	487.3	487.3	487.7	0.4
M	21,120	280	2,055	3.1	489.9	489.9	490.3	0.4
N	22,775	170	1,753	3.7	492.9	492.9	493.5	0.6
O	24,180	400	4,345	1.5	495.2	495.2	495.7	0.5
P	24,600	180	2,475	2.6	495.4	495.4	495.9	0.5
Q	25,525	180	2,390	2.7	496.2	496.2	496.8	0.6
R	25,885	290	3,811	1.7	496.6	496.6	497.2	0.6
S	30,060	150	1,836	3.4	502.1	502.1	502.6	0.5
T	32,385	170	1,704	3.1	505.2	505.2	505.7	0.5
U	34,465	175	1,500	3.5	508.5	508.5	508.9	0.4
V	35,341	200	1,878	2.7	510.9	510.9	511.6	0.7
W	35,930	250	2,124	2.4	511.7	511.7	512.4	0.7
X	40,060	290	1,967	2.6	516.9	516.9	517.5	0.6
Y	40,840	175	1,329	3.9	518.8	518.8	519.2	0.4
Z	42,560	150	1,340	3.4	522.9	522.9	523.3	0.4
AA	46,590	140	1,492	3.1	529.5	529.5	529.9	0.4

[1] Feet above mouth.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

FLOODWAY DATA

HAW CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Haw Creek (con't)								
AB	48,325	140	1,033	3.1	531.8	531.8	532.4	0.6
AC	50.500	185	1,380	2.3	536.4	536.4	536.8	0.4
AD	52,625	220	1,467	2.2	540.4	540.4	540.9	0.5
AE	53,150	120	716	4.4	541.1	541.1	541.9	0.8
AF	54,585	100	883	3.4	546.0	546.0	546.4	0.4
AG	56,685	100	842	3.5	550.1	550.1	550.6	0.5
AH	58,960	140	1,058	2.8	554.6	554.6	555.1	0.5
AI	61,240	175	895	3.0	558.6	558.6	559.3	0.7
AJ	62,530	355	1,416	1.9	561.6	561.6	561.9	0.3
AK	64,475	110	618	4.1	566.4	566.4	566.9	0.5
AL	65,770	100	716	3.5	570.7	570.7	571.6	0.9
AM	66,850	90	608	4.1	574.7	574.7	575.4	0.7
AN	67,447	160	652	3.7	578.6	578.6	578.9	0.3
AO	68,490	180	785	2.1	582.1	582.1	582.6	0.5
AP	69,310	200	1,265	1.3	585.8	585.8	586.3	0.5
AQ	71,850	100	446	3.6	595.0	595.0	595.6	0.6
Tributary A to Haw Creek								
A	100	140	650	4.1	530.2	526.6[2]	527.2[2]	0.6
B	1,600	105	595	4.4	533.5	533.5	534.3	0.8
C	3,600	105	525	5.0	544.0	544.0	544.1	0.1

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORTED AREAS)

FLOODWAY DATA

HAW CREEK-TRIBUTARY A TO HAW CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Tributary A to Haw Creek (con't.)								
D	3,900	130	735	3.6	545.3	545.3	545.9	0.6
E	4,516	170	1,450	1.7	551.9	551.9	552.4	0.5
Big Alamance Creek								
A	200	500	5,191	5.9	480.1	475.1[2]	475.1[2]	0.0
B	438	350	4,483	6.9	480.1	475.5[2]	475.5[2]	0.0
C	1,400	345	5,261	5.9	480.1	477.7[2]	477.7[2]	0.0
D	2,700	345	5,414	5.7	480.1	479.7[2]	479.7[2]	0.0
E	4,070	345	5,929	5.2	481.3	481.3	481.6	0.3
F	5,835	345	5,851	5.3	483.3	483.3	483.6	0.3
G	8,120	345/200[3]	6,797	4.5	485.8	485.8	486.2	0.4
H	9,900	345/65[3]	6,615	4.7	487.2	487.2	487.8	0.6
I	10,714	345/174[3]	6,642	4.6	488.5	488.5	489.1	0.6
J	13,230	370/100[3]	6,688	4.4	490.1	490.1	490.9	0.8
K	15,630	380/278[3]	7,536	3.9	491.9	491.9	492.6	0.7
L	17,230	470/62[3]	9,439	3.1	492.8	492.8	493.6	0.8
M	18,690	440/282[3]	9,497	3.1	493.4	493.4	494.2	0.8

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

[3] Total width/width within unincorporated areas.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

TRIBUTARY A TO HAW CREEK-BIG ALAMANCE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Big Alamance Creek (con't.)								
N	19,850	325/80[2]	6,794	4.3	493.9	493.9	494.7	0.8
O	20,937	295/133[2]	6,084	4.8	494.6	494.6	495.4	0.8
P	22,660	280	6,695	4.4	496.0	496.0	496.5	0.5
Q	23,680	370	7,613	3.9	496.6	496.6	497.2	0.6
R	27,120	320	6,434	3.3	499.1	499.1	499.6	0.5
S	30,120	320	6,865	3.3	500.4	500.4	501.0	0.6
T	30,734	260	5,813	3.9	500.6	500.6	501.2	0.6
U	31,380	275	5,600	4.0	501.1	501.1	501.7	0.6
V	34,030	300	6,743	3.3	502.8	502.8	503.4	0.6
W	35,890	355	7,577	2.8	503.5	503.5	504.2	0.7
X	37,815	360	6,905	3.1	504.4	504.4	505.0	0.6
Y	39,060	340	6,664	3.2	504.9	504.9	505.6	0.7
Z	40,980	320	6,859	3.1	505.9	505.9	506.5	0.6
AA	42,630	320	6,452	3.3	506.5	506.5	507.2	0.7
AB	44,460	320	5,416	3.9	507.5	507.5	508.2	0.7
AC	46,640	300	5,352	4.0	509.1	509.1	509.7	0.6
AD	47,900	225	4,701	4.5	509.9	509.9	510.6	0.7
AE	48,420	230	4,047	5.2	510.5	510.5	511.2	0.7
AF	49,290	320	6,412	3.3	511.4	511.4	512.0	0.6

[1] Feet above mouth.

[2] Total width/width within unincorporated areas.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORTED AREAS)

FLOODWAY DATA

BIG ALAMANCE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Big Alamance Creek (con't.)								
AG	49,536	330	5,362	3.9	511.5	511.5	512.1	0.6
AH	50,390	290	4,722	4.5	512.2	512.2	512.8	0.6
AI	52,420	280	5,213	4.0	514.4	514.4	514.9	0.5
AJ	54,410	275	4,561	4.6	515.8	515.8	516.4	0.6
Little Alamance Creek								
A	20,930	140/20[2]	1,470	3.0	512.8	512.8	513.1	0.3
B	22,440	140/25[2]	1,439	3.1	513.7	513.7	514.6	0.9
C	23,230	170/60[2]	1,732	2.6	515.3	515.3	516.0	0.7
D	24,320	120/20[2]	1,004	4.5	516.2	516.2	517.0	0.8
E	25,490	300/25[2]	2,535	1.8	519.5	519.5	520.0	0.5
F	27,000	120/65[2]	969	4.6	520.4	520.4	521.3	0.9
G	27,740	130/20[2]	1,420	3.2	522.8	522.8	523.2	0.4
H	28,710	230/205[2]	1,750	2.6	523.9	523.9	524.4	0.5
I	29,420	150/115[2]	1,128	4.0	524.7	524.7	525.2	0.5
J	29,840	140/90[2]	767	5.8	525.8	525.8	526.2	0.4
K	30.790	165/25[2]	1,005	4.2	532.4	532.4	532.4	0.0
L	31,060	130/35[2]	855	4.9	533.2	533.2	533.2	0.0
M	31,430	170/145[2]	1,193	3.5	534.8	534.8	534.9	0.1

[1] Feet above mouth.

[2] Total width/width within unincorporated areas.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

BIG ALAMANCE CREEK-LITTLE ALAMANCE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Little Alamance Creek (con't)								
N	33,240	120/70[3]	766	5.5	538.0	538.0	538.8	0.8
O	34,040	120/95[3]	991	4.2	542.1	542.1	542.3	0.2
Stinking Quarter Creek								
A	320	170	1,917	7.7	496.7	485.3[2]	485.3[2]	0.0
B	1,530	210	2,719	5.5	496.7	488.4[2]	488.4[2]	0.0
C	2,778	405	4,162	3.6	496.7	490.2[2]	490.4[2]	0.2
D	4,000	190	2,752	5.4	496.7	491.4[2]	491.7[2]	0.3
E	4,860	190	2,802	5.2	496.7	492.9[2]	493.2[2]	0.3
F	5,780	220	3,157	4.6	496.7	494.2[2]	494.6[2]	0.4
Rock Creek								
A	220	150	1,310	3.7	496.7	487.8[2]	487.8[2]	0.0
B	2,730	130	1,125	4.3	496.7	491.0[2]	491.7[2]	0.7
C	4,690	110	982	5.0	496.7	495.2[2]	495.8[2]	0.6
D	5,770	110	1,198	4.1	497.4	497.4	497.9	0.5
E	9,200	100	1,102	4.4	502.3	502.3	502.9	0.6
F	10,400	120	1,399	3.3	503.9	503.9	504.4	0.5
G	12,530	105	921	5.1	505.9	505.9	506.4	0.5
H	14,600	150	1,082	4.3	516.4	516.4	516.7	0.3

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

[3] Total width/width within unincorporated areas.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

LITTLE ALAMANCE CREEK-STINKING QUARTER CREEK-ROCK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Rock Creek (con't.)								
I	16,430	160	757	6.1	524.9	524.9	525.2	0.3
J	18,140	290	2,494	1.9	529.2	529.2	529.7	0.5
K	20,000	150	1,184	3.6	530.9	530.9	531.6	0.7
L	22,130	200	1,664	2.6	534.3	534.3	534.8	0.5
M	23,770	240	1,459	2.8	536.4	536.4	536.9	0.5
Gunn Creek								
A	320	100	743	4.4	503.2	488.6[2]	488.6[2]	0.0
B	3,190	92	478	6.7	503.2	495.6[2]	496.0[2]	0.4
C	4,730	180	661	4.9	506.7	506.7	506.7	0.0
D	6,620	120	694	4.5	516.4	516.4	516.7	0.3
West Back Creek								
A	380	200	1,098	4.3	516.0	506.1[2]	506.1[2]	0.0
B	1,040	170	1,406	3.4	516.0	508.0[2]	508.1[2]	0.1
C	2,390	135	1,018	4.6	516.0	510.5[2]	511.0[2]	0.5
D	4,910	120	1,035	4.3	517.1	517.1	517.3	0.2
E	7,740	170	958	4.7	523.6	523.6	524.2	0.6
F	9,770	120	773	5.8	531.2	531.2	531.5	0.3

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

ROCK CREEK-GUNN CREEK-WEST BACK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
West Back Creek (con't.)								
G	10,680	75	785	5.3	534.0	534.0	534.2	0.2
H	11,060	70	644	6.4	534.6	534.6	534.9	0.3
I	12,210	90	616	6.7	539.0	539.0	539.1	0.1
J	14,280	100	971	4.3	545.1	545.1	545.4	0.3
K	17,390	130	1,151	3.4	550.2	550.2	551.0	0.8
L	18,680	150	904	4.4	552.7	552.7	553.3	0.6
M	20,370	100	939	4.2	557.4	557.4	557.7	0.3
N	22,380	200	1,465	2.7	560.7	560.7	561.4	0.7
O	25,150	110/75[3]	697	5.3	566.3	566.3	566.6	0.3
West Back Creek Tributary								
A	90	20	39	9.1	532.6	530.1[2]	530.1[2]	0.0
B	530	400	7,857	0.1	554.5	554.5	554.5	0.0
C	1,100	195	3,041	0.3	554.5	554.5	554.5	0.0
D	1,690	140	1,517	0.6	554.6	554.6	554.7	0.1
East Back Creek								
A	1,140	230	2,087	6.4	493.5	488.4[2]	488.6[2]	0.2

[1] Feet above mouth.
[2] Elevations computed without consideration of backwater effects.
[3] Total width/width within unincorporated areas.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORTED AREAS)

FLOODWAY DATA

WEST BACK CREEK-WEST BACK CREEK TRIBUTARY-EAST BACK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
East Back Creek (con't.)								
B	2,410	160	1,983	6.7	493.5	491.5[2]	491.6[2]	0.1
C	3,850	170	2,332	5.7	493.7	493.7	493.9	0.2
D	6,065	180	2,277	5.5	497.7	497.7	498.4	0.7
E	7,400	220	2,880	4.4	498.7	498.7	499.3	0.6
F	8,860	185	2,747	4.6	500.1	500.1	500.6	0.5
G	9,270	300	4,271	2.9	500.8	500.8	501.4	0.6
H	10,770	260	3,772	3.3	501.4	501.4	502.2	0.8
I	13,290	260	3,610	3.5	503.3	503.3	504.0	0.7
J	16,530	260	3,798	3.3	505.9	505.9	506.4	0.5
K	17,860	210	3,480	3.6	506.8	506.8	507.4	0.6
L	18,480	280	4,141	3.0	507.4	507.4	508.0	0.6
M	19,270	230	3,079	4.1	508.2	508.2	508.9	0.7
N	22,670	300	5,229	2.4	510.9	510.9	511.6	0.7
O	26,110	420	6,504	1.9	512.1	512.1	512.9	0.8
P	28,100	360	4,520	2.8	512.9	512.9	513.8	0.9
Q	30,850	500	7,142	1.7	514.6	514.6	515.2	0.6
R	33,850	255/70[3]	3,781	3.1	515.2	515.2	516.0	0.8
S	35,300	500/425[3]	7,118	1.6	516.1	516.1	516.8	0.7
T	35,820	470/265[3]	4,780	2.4	517.3	517.3	517.9	0.6
U	36,260	500	6,927	1.7	517.6	517.6	518.2	0.6
V	39,900	700	8,769	1.3	519.5	519.5	520.0	0.5

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

[3] Total width/width within unincorporated areas.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

EAST BACK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
East Back Creek (con't.)								
W	44,180	350	[illegible],379	3.0	520.7	520.7	521.4	0.7
X	49,330	300	4,326	2.4	525.9	525.9	526.5	0.6
Y	53,170	300	2,734	3.7	528.8	528.8	529.5	0.7
Z	53,750	350	5,136	2.0	529.4	529.4	530.3	0.9
McAdams Creek								
A	60	157	775	3.2	515.3	508.3[2]	508.3[2]	0.0
B	380	300	1,375	1.8	515.3	508.6[2]	508.7[2]	0.1
C	900	200	880	2.8	515.3	508.7[2]	509.4[2]	0.7
D	2,270	200	830	3.0	515.3	512.6[2]	512.7[2]	0.1
E	3,600	125	570	4.4	516.9	516.9	517.4	0.5
F	5,700	120	615	3.8	526.9	526.9	526.9	0.0
G	10,180	110	615	3.6	542.9	542.9	543.6	0.7
H	12,990	80	535	4.1	554.2	554.2	554.9	0.7
I	14,040	80	835	2.4	561.5	561.5	562.0	0.5
J	15,180	80	530	3.8	562.3	562.3	562.9	0.6
K	16,765	60	305	5.9	572.1	572.1	572.3	0.2
L	18,615	220	970	1.9	578.0	578.0	578.7	0.7
M	19,555	72	280	6.1	580.4	580.4	581.3	0.9

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

EAST BACK CREEK-MC ADAMS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Mill Creek								
A	1,540	200	1,545	2.8	529.2	525.7[2]	526.4[2]	0.7
B	3,580	150	1,550	2.8	530.8	530.8	531.3	0.5
C	4,340	300	2,730	1.6	531.4	531.4	532.2	0.8
D	5,570	300	1,770	2.4	531.9	531.9	532.8	0.9
E	6,230	140	800	5.3	534.2	534.2	534.7	0.5
F	6,700	140	1,160	3.7	537.0	537.0	537.1	0.1
G	9,100	170	1,060	4.0	543.6	543.6	543.6	0.0
H	9,580	130	920	4.6	545.5	545.5	546.2	0.7
I	10,300	55	580	6.7	549.0	549.0	549.4	0.4
J	10,420	44	420	9.3	549.0	549.0	549.4	0.4
K	10,900	75/0[3]	660	5.9	552.7	552.7	552.9	0.2
L	11,140	155/0[3]	755	5.1	555.6	555.6	555.8	0.2
M	12,620	180	1,120	3.5	559.3	559.3	559.9	0.6
N	13,940	430/0[3]	4.040	1.0	560.8	560.8	561.6	0.8
O	15.070	200/0[3]	1,425	2.7	561.6	561.6	562.4	0.8
P	15,790	170[3]	630	6.0	563.9	563.9	564.3	0.4
Boyds Creek								
A	185	50	283	11.2	510.2	494.1[2]	494.1[2]	0.0
B	880	140	898	3.5	510.2	498.8[2]	499.0[2]	0.2
C	2,050	140	973	3.3	510.2	501.0[2]	501.4[2]	0.4

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

[3] Total width/width within unincorporated areas.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

MILL CREEK-BOYDS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Boyds Creek (con't.)								
D	2,680	100	674	4.4	510.2	503.7[2]	503.8[2]	0.1
E	3,430	140	981	3.0	510.2	505.0[2]	505.7[2]	0.7
F	4,790	230	1,384	2.1	510.2	506.9[2]	507.5[2]	0.6
G	5,620	150	782	3.8	510.2	507.9[2]	508.5[2]	0.6
H	6,650	135	814	2.8	510.8	510.8	511.2	0.4
I	9,010	70	433	4.9	515.8	515.8	516.5	0.7
J	10,830	50	401	5.3	521.2	521.2	521.4	0.2
K	12,570	70	236	7.7	527.4	527.4	527.9	0.5
L	14,940	60	331	5.5	545.3	545.3	545.5	0.2
M	16,100	80	432	4.2	558.6	558.6	558.7	0.1
N	16,400	80	256	7.0	560.7	560.7	560.9	0.2
O	17,220	50	291	5.0	568.4	568.4	568.5	0.1
Stony Creek								
A	500	200	2,670	5.9	522.4	518.4[2]	518.4[2]	0.0
B	1,340	200	3,180	4.9	524.0	519.9[2]	520.1[2]	0.2
C	1,720	150	2,750	5.7	525.0	520.5[2]	520.7[2]	0.2
D	2,420	200	3,600	4.3	525.0	521.1[2]	521.3[2]	0.2
E	3,190	240	3,380	4.6	525.0	521.3[2]	521.6[2]	0.3
F	14,120	277	4,525	3.2	543.7	543.7	543.7	0.0
G	16,200	200	2,720	5.3	546.3	546.3	546.6	0.3

[1] Feet above mouth.
[2] Elevations computed without consideration of backwater effects.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

BOYDS CREEK-STONY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Stony Creek (con't.)								
H	18,200	200	2,850	5.1	548.8	548.8	549.1	0.3
I	20,560	300	4,005	3.4	551.4	551.4	551.7	0.3
J	24,460	300	3,230	3.3	554.9	554.9	555.4	0.5
K	25,940	300	4,990	2.1	555.6	555.6	556.2	0.6
L	27,400	150	2,355	3.4	556.1	556.1	556.9	0.8
Dry Creek								
A	190	115	555	5.1	577.8	562.8[2]	562.8[2]	0.0
B	540	100	430	5.1	577.8	564.7[2]	564.8[2]	0.1
C	2,380	80	505	4.1	577.8	571.2[2]	571.3[2]	0.1
D	3,720	80	460	4.5	577.8	574.5[2]	574.9[2]	0.4
E	5,540	70	415	4.8	582.3	582.3	582.3	0.0
F	6,600	70	465	4.1	585.1	585.1	585.4	0.3
G	8,320	60	340	5.3	590.2	590.2	591.0	0.8
H	11,640	80	445	3.8	605.7	605.7	606.2	0.5
Travis Creek								
A	120	200	2,111	2.4	584.2	576.3[2]	576.3[2]	0.0
B	850	180	1,875	2.7	584.2	576.5[2]	576.7[2]	0.2
C	1,020	120	1,476	3.5	584.2	577.1[2]	577.3[2]	0.2

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

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TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

STONY CREEK-DRY CREEK-TRAVIS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Travis Creek (con't.)								
D	1,650	170	1,659	3.1	584.2	577.8[2]	578.1[2]	0.3
E	2,825	180	1,712	3.0	584.2	579.3[2]	579.9[2]	0.6
F	5,110	150	1,585	3.2	584.2	583.2[2]	583.7[2]	0.5
G	5,770	75	1,112	4.6	584.2	583.8[2]	584.5[2]	0.7
H	6,150	140	1,668	2.9	586.3	586.3	587.0	0.7
I	7,610	160	1,643	2.9	587.7	587.7	588.6	0.9
J	8,310	160	1,854	2.6	588.6	588.6	589.3	0.7
K	9,910	200	2,249	2.1	590.1	590.1	590.7	0.6
L	11,140	165	1,537	2.4	591.0	591.0	591.6	0.6
M	12,770	265	2,668	2.2	592.7	592.7	593.2	0.5
N	13,900	140	1,246	2.9	593.9	593.9	594.5	0.6
O	14,320	95	854	4.2	594.6	594.6	595.3	0.7
P	14,680	270	2,634	1.2	595.9	595.9	596.5	0.6
Q	15,580	210	1,581	1.9	596.1	596.1	596.7	0.6
R	16,030	130	652	4.7	596.5	596.5	597.0	0.5
S	17,790	150	1,299	2.3	600.6	600.6	601.3	0.7
T	19,430	180	1,132	2.7	602.7	602.7	603.5	0.8
U	21,030	235	1,672	1.4	605.3	605.3	605.9	0.6
V	21,085	190	1,123	2.1	605.3	605.3	605.9	0.6
W	21,250	160	1,000	2.3	605.4	605.4	606.0	0.6
X	21,750	160	950	2.5	606.4	606.4	607.2	0.8

[1] Feet above mouth.

[2] Elevation computed without consideration of backwater effects.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

TRAVIS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Travis Creek (con't.)								
Y	22,440	140	668	3.5	608.5	608.5	609.2	0.7
Z	23,245	120	1,124	2.0	615.7	615.7	616.0	0.3
AA	25,340	200	1,528	1.4	616.6	616.6	617.2	0.6
AB	26,070	250	1,574	1.0	616.8	616.8	617.6	0.8
AC	26,840	200	955	1.6	617.3	617.3	628.0	0.7
Tickle Creek								
A	340	75	485	4.6	590.4	587.2[2]	587.3[2]	0.1
B	1,400	100	595	3.7	592.7	592.7	592.8	0.1
C	2,000	175	1,280	1.7	594.0	594.0	594.4	0.4
D	3,700	130	640	3.5	596.4	596.4	597.2	0.8
E	4,441	120	520	4.1	602.6	602.6	602.6	0.0
F	5,260	140	540	3.9	608.0	608.0	608.2	0.2
G	5,670	120	565	3.8	611.5	611.5	611.9	0.4
H	7,700	125	595	3.3	622.5	622.5	622.7	0.2
I	9,825	180	770	2.5	629.6	629.6	630.3	0.7
J	11,627	130	795	2.2	636.7	636.7	637.3	0.6
K	12,950	200	995	1.7	638.2	638.2	638.7	0.5
L	13,600	170	610	2.7	639.4	639.4	640.1	0.7
M	14,400	145	510	2.8	643.1	643.1	643.4	0.3

[1] Feet above mouth.

[2] Elevations computed wihout consideration of backwater effects.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

TRAVIS CREEK-TICKLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDYH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F.P.S.)	REGULATORY (NGVD)	WITHOUT FLOODWAY (NGVD)	WITH FLOODWAY (NGVD)	INCREASE (FEET)
Tributary A to Travis Creek								
A	100	120	321	3.6	616.8	614.7[2]	614.7[2]	0.0
B	1,270	90	328	3.6	619.7	619.7	620.1	0.4
C	1,470	70	221	5.0	620.9	620.9	621.2	0.3
Reedy Fork								
A	1,400	370	4,679	4.5	595.8	595.0[2]	595.3[2]	0.3
B	2,350	385	5,004	4.2	596.1	596.1	596.8	0.7
C	4,060	260	3,545	5.8	599.1	599.1	599.7	0.6
D	4,850	270	3,833	5.5	600.3	600.3	600.8	0.5
E	5,640	360	4,800	4.3	607.4	607.4	608.1	0.7
F	6,330	350	4,696	4.5	608.2	608.2	608.7	0.5
G	8,220	350	5,182	4.1	610.9	610.9	611.5	0.6
H	9,800	320	4,861	4.3	612.8	612.8	613.4	0.6
I	11,700	490	7,162	2.9	615.0	615.0	615.6	0.6
J	14,040	400/250[3]	5,897	3.6	616.8	616.8	617.5	0.7

[1] Feet above mouth.

[2] Elevations computed without consideration of backwater effects.

[3] Total width/width within unincorporated areas.

TABLE 4

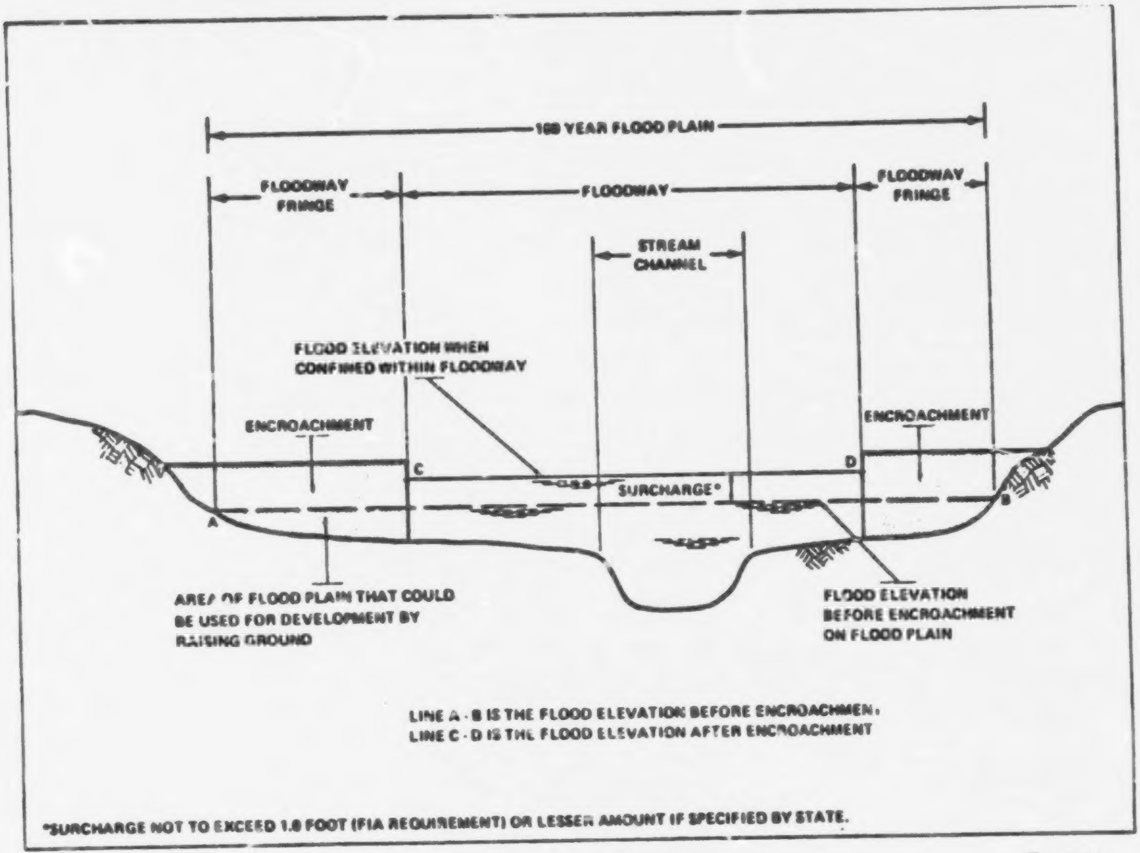
FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOODWAY DATA

TRIBUTARY A TO TRAVIS CREEK-REEDY FORK


100 YEAR FLOOD PLAIN
FLOODWAY FRINGE
FLOODWAY
FLOODWAY FRINGE
STREAM CHANNEL
FLOOD ELEVATION WHEN CONFINED WITHIN FLOODWAY
ENCROACHMENT
ENCROACHMENT
C
D
SURCHARGE*
A
B
AREA OF FLOOD PLAIN THAT COULD BE USED FOR DEVELOPMENT BY RAISING GROUND
FLOOD ELEVATION BEFORE ENCROACHMENT ON FLOOD PLAIN

LINE A - B IS THE FLOOD ELEVATION BEFORE ENCROACHMENT
LINE C - D IS THE FLOOD ELEVATION AFTER ENCROACHMENT

*SURCHARGE NOT TO EXCEED 1.0 FOOT (FIA REQUIREMENT) OR LESSER AMOUNT IF SPECIFIED BY STATE.

FLOODWAY SCHEMATIC

Figure 2

Portions of the floodway for streams flowing along the study boundaries are located outside the county's jurisdiction.

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, FEMA has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHFs), and flood insurance zone designations for each significant flooding source affecting the Alamance County.

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach.

Average Difference Between 10- and 100-Year Floods	Variation
0 to 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet

The location of reaches determined for the flooding sources of Alamance County are shown on the Flood Profiles (Exhibit 1).

5.2 Flood Hazard Factors (FHFs)

The Flood Hazard Factor is used to correlate flood information with insurance rate tables. Correlations between property damages from floods and their assigned FHFs are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between the water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year flood water-surface elevations is greater than 10.0 feet, the accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHFs, the entire unincorporated area of Alamance County was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations.

Zones A3,A4,A5,A6,A7,: A8,A9,A10,A11, A12,A15 and A18:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to FHFs.
Zone A:	Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations shown or FHFs determined.

Zone B:	Areas between the Special Flood Hazard Area and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; or areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding.

Table 5, "Flood Insurance Zone Data," summarizes the flood elevation differences, FHFs, flood insurance zones, and base flood elevation for each flooding source studied in detail in the community.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for Alamance County is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by FEMA.

6.0 OTHER STUDIES

In 1933, the COE published a Cape Fear River Basin study that included Alamance County (Reference 9). This study was reviewed by a group of cooperating agencies including the COE, SCS, and N.C. Department of Natural Resources and Community Development; and a joint report was published in 1961 (Reference 10). Also, in 1961 the COE published a Comprehensive Report on the Cape Fear River Basin (Reference 11). Additional interim reports on the Upper Cape Fear Basin were published by the COE in 1967 (Reference 12) and the U.S. Department of Agriculture, SCS in 1975 (Reference 13).

The USGS has prepared Flood Prone Area Maps for several quadrangles in Alamance County (Reference 14). They also prepared a report in 1976 on the magnitude and frequency of floods in North Carolina (Reference 15). That report presents generalized regression equations for computing flood discharges in the Piedmont region. Discharges used for this Flood Insurance Study were considerably higher than those calculated from the USGS study equations. However, the higher discharges derived by using the COE regional study equations

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Haw River							
Reach 1	0005,0025, 0030,0035, 0055,0075, 0095,0100, 0120	-7.6	-2.6	+6.5	075	A15	Varies
Haw Creek							
Reach 1	0075,0080	-5.0	-1.5	+3.8	050	A10	Varies
Reach 2	0060,0080	-3.0	-1.0	+2.4	030	A6	Varies
Tributary A to Haw Creek							
Reach 1	0080	-2.2	-0.6	+1.6	020	A4	Varies
Big Alamance Creek							
Reach 1	0070,0075,	-7.3	-2.2	+5.4	075	A15	Varies
Reach 2	0065,0070	-8.9	-2.7	+6.9	090	A18	Varies

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT-SEE MAP

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

HAW RIVER-HAW CREEK-TRIBUTARY A TO HAW CREEK-BIG ALAMANCE CREEK

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Little Alamance Creek							
Reach 1	0050,0070	-2.8	-0.7	+2.2	030	A6	Varies
Mill Creek							
Reach 1	0040,0060	-3.2	-1.0	+2.5	030	A6	Varies
Boyds Creek							
Reach 1	0035,0055	-2.6	-1.0	+2.1	025	A5	Varies
Stony Creek							
Reach 1	0030,0035	-2.7	-0.7	+2.2	025	A5	Varies
Reach 2	0030	-5.6	-1.7	+4.1	055	A11	Varies
Dry Creek							
Reach 1	0025,0030	-2.6	-0.8	+2.1	025	A5	Varies
Travis Creek							
Reach 1	0025	-4.5	-1.4	+3.2	045	A9	Varies
Reach 2	0025	-3.1	-1.1	+2.0	030	A6	Varies

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT-SEE MAP

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

LITTLE ALAMANCE CREEK-MILL CREEK-BOYDS CREEK-
STONY CREEK-DRY CREEK-TRAVIS CREEK

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
Tickle Creek Reach 1	0025	-2.0	-0.6	+1.5	020	A4	Varies
Rock Creek Reach 1	0070,0090	-3.6	-1.1	+2.7	035	A7	Varies
Gunn Creek Reach 1	0070	-2.0	-0.7	+1.5	020	A4	Varies
West Back Creek Reach 1	0045,0065	-3.9	-1.2	+2.9	040	A8	Varies
West Back Creek Tributary							
Reach 1	0045	-5.9	-0.8	+2.6	060	A12	555'
Reach 2	0045	-3.2	-0.8	+2.5	030	A6	555'
East Back Creek Reach 1	0045,0055, 0060,0075	-5.7	-1.7	+4.6	055	A11	Varies

[1]FLOOD INSURANCE RATE MAP PANEL
[2]WEIGHTED AVERAGE
[3]ROUNDED TO NEAREST FOOT-SEE MAP

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

TICKLE CREEK-ROCK CREEK-GUNN CREEK-WEST BACK CREEK-WEST BACK CREEK TRIBUTARY-EAST BACK CREEK

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1.0% (100-YEAR) FLOOD AND			FHF	ZONE	BASE FLOOD ELEVATION[3]
		10% (10 YR.)	2% (50 YR.)	0.2% (500 YR.)			
McAdams Creek Reach 1	0055,0060	-2.0	-0.6	+1.5	020	A4	Varies
Tributary A to Travis Creek Reach 1	0025	-1.5	-0.5	+1.2	015	A3	Varies
Reedy Fork Reach 1	0025	-5.6	-2.3	+4.9	055	A11	Varies

[1] FLOOD INSURANCE RATE MAP PANEL
[2] WEIGHTED AVERAGE
[3] ROUNDED TO NEAREST FOOT-SEE MAP

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

FLOOD INSURANCE ZONE DATA

MC ADAMS CREEK-TRIBUTARY A TO TRAVIS CREEK-REEDY FORK

(Section 3.1) are considered to be more representative of actual conditions in Alamance County since that study reflects conditions in smaller, more localized geographic and physiographic regions than the USGS study. These discharges were also modified to account for urbanization in certain watersheds (Reference 6).

The COE has completed Flood Insurance Studies for adjoining Guilford and Orange Counties and the incorporated communites of Mebane, Graham, Haw River, Burlington, and Gibsonville. This study is authoritative for the purposes of the National Flood Insurance Program; data presented herein either supersede or are compatible with all previous determinations.

7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic, and other pertinent data used in this study can be obtained by contacting the Insurance and Mitigation Division, Federal Emergency Management Agency, 1375 Peachtree Street, N.E., Atlanta, Georgia 30309.

8.0 BIBLIOGRAPHY AND REFERENCES

1. U.S. Department of Commerce, Bureau of the Census, Current Population Report, Estimates of the Population of North Carolina Counties and Metropolitan Areas; July 1, 1977 (Revised) and 1978 (Provisional), August 1979.

2. U.S. Department of Agriculture, Soil Conservation Serv ance County, North Carolina, Soils, 1970.

3. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Climatological Data, North Carolina, Annual Summary, 1977.

4. U.S. Water Resources Council, Guidelines for Determining Flood Flow Frequency, Bulletin No. 17, Hydrology Committee, March 1976.

5. U.S. Department of the Interior, Geological Survey, Surface Water Records, Water Resources Data for North Carolina and Virginia, Part 1, Summary 1965, subsequent annual reports.

6. Putnam, Arthur L., Effect of Urban Development on Floods in the Piedmont Province of North Carolina, U.S. Geological Survey, 1972.

7. U.S. Army Corps of Engineers, Hydrologic Engineering Center, Computer Program 723-X6-L202A HEC-2, Water-Surface Profiles, Davis, California, December 1968, with updates.

8. Alamance County, North Carolina, Department of Planning, Topographic Map, Alamance County, N.C., April 1969, scale 1" = 400'.

9. House Document 193, 73rd Congress, 1933.

10. U.S. Army Corps of Engineers, Wilmington District; U.S. Department of Agriculture, Soil Conservation Service; North Carolina Department of Water Resources; Cape Fear River N.C., Joint Report of Land and Water Resources Study, 1961.

11. U.S. Army Corps of Engineers, Wilmington District, Comprehensive Report on cape Fear River Basin, North Carolina, 1961.

12. U.S. Army Corps of Engineers, Wilmington District, Cape Fear River Basin, North Carolina, Interim Report on Randleman and Howards Mill Projects, 1967.

13. U.S. Department of Agriculture, Soil Conservation Service, Upper Cape Fear River Basin, North Carolina, Interim Type IV Joint Study, 1975.

14. U.S. Department of the Interior, Geological Survey, Map of Flood Prone Areas, Scale 1:24,000; Ossipee, N.C., 1973; Lake Burlington, N.C., 1973; Gibsonville, N.C., 1973; Burlington, N.C., 1973; Mebane, N.C., 1973; Kimesville, N.C., 1973; Bynum, N.C., 1972.

15. U.S. Department of the Interior, Geological Survey, Floods in North Carolina, Magnitude and Frequency, 1976.

9.0 REVISIONS DESCRIPTION (Revised April 3, 1987)

9.1 Purpose

The purpose of this Flood Insurance Study Revisions Description is to incorporate revised data into this currently effective Flood Insurance Study for the Unincorporated Areas of Alamance County, North Carolina. This Revisions Description is intended to provide updated information that aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

9.2 Acknowledgments

The hydrologic and hydraulic analyses for this Revisions Description were performed by the U.S. Army Corps of Engineers, Wilmington District. The Federal Emergency Management Agency (FEMA) reviewed and accepted these data for purposes of this revision.

9.3 Scope

This revision involves the changing of a Zone B Flood Zone Designation to a Zone A Special Flood Hazard Area along a 1.5-mile reach of Jordan Creek, 0.25 mile above the confluence of Stoney Creek and Jordan Creek. The changing of zone designation is the result of a mismatch of the zone designation.

9.4 Other Studies

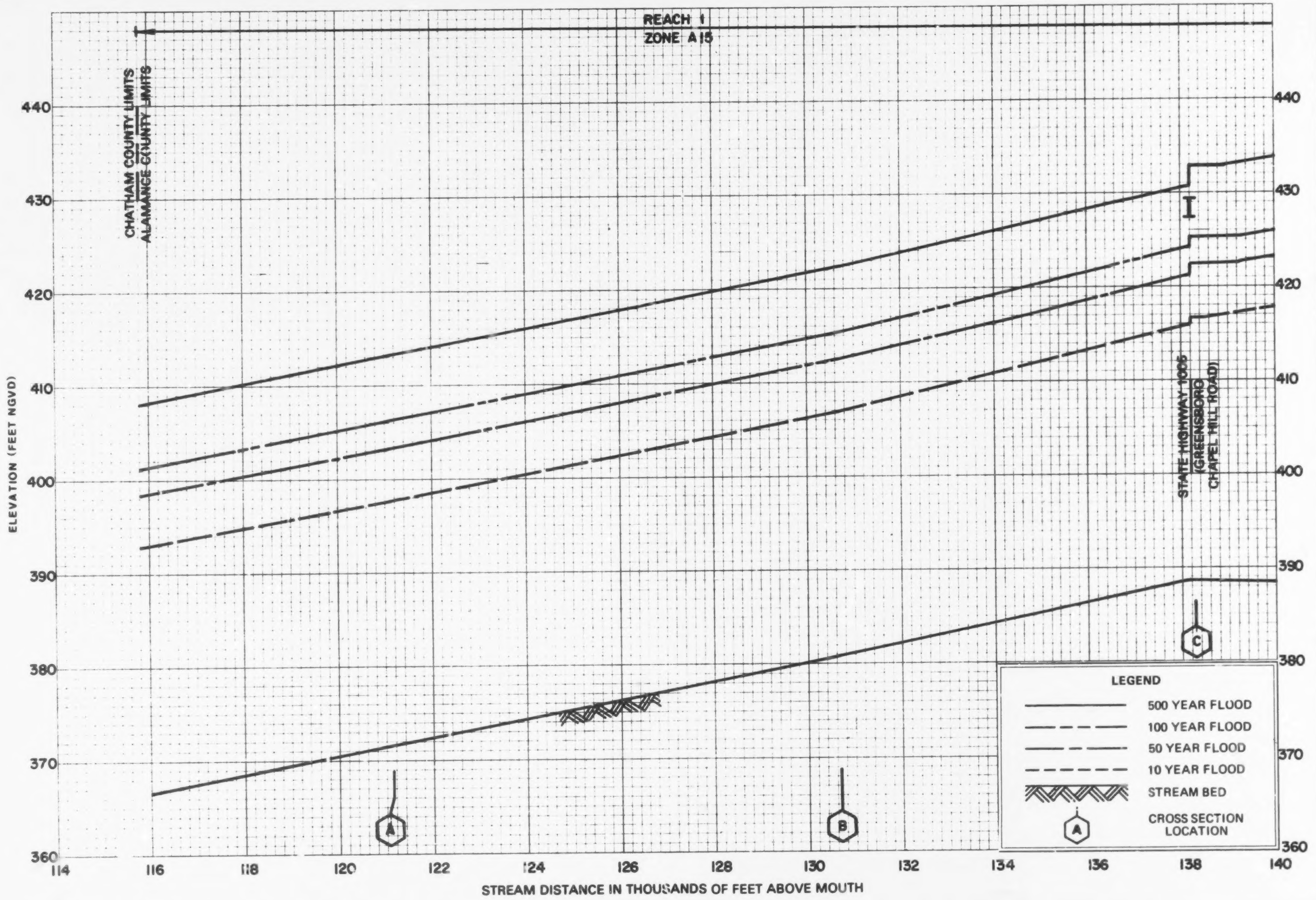
This revision is in agreement with the Flood Insurance Studies for the Unincorporated Areas of Guilford, Randolph, Orange, and Chatham Counties (References 1-4).

9.5 Location of Data

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Natural and Technological Hazards Division, FEMA, 1371 Peachtree Street, NE., Suite 736, Atlanta, Georgia 30309.

9.6 Bibliography and References

1. Federal Emergency Management Agency, Flood Insurance Study, Guilford County, Unincorporated Areas, North Carolina, June 1980.
2. ----------, Flood Insurance Study, Randolph County, Unincorporated Areas, North Carolina, July 1981.
3. ----------, Flood Insurance Study, Orange County, Unincorporated Areas, March 1981.
4. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Insurance Study, Chatham County, Unincorporated Areas, North Carolina, May 1979.



FLOOD PROFILES

HAW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

01P

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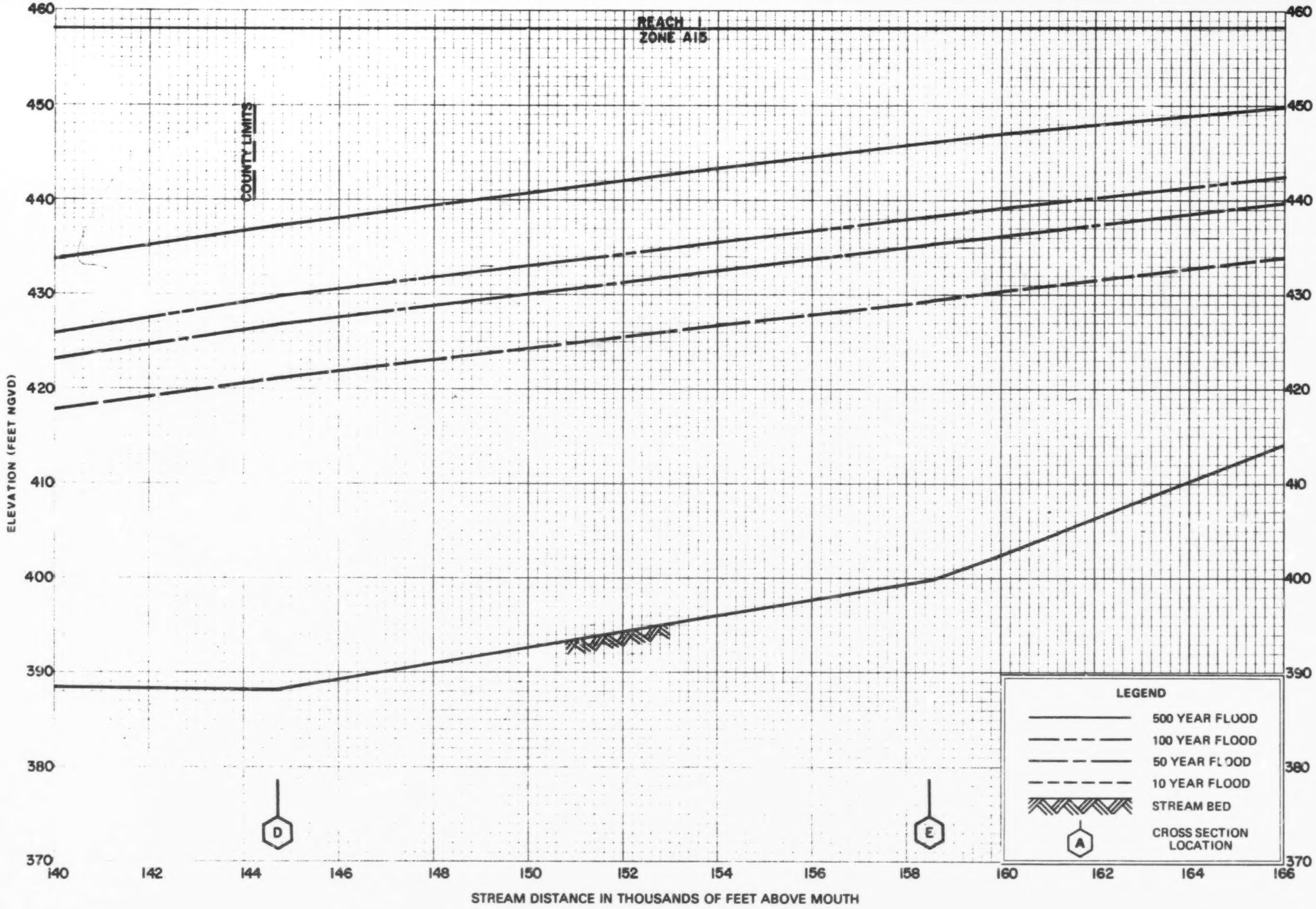

FLOOD PROFILES

HAW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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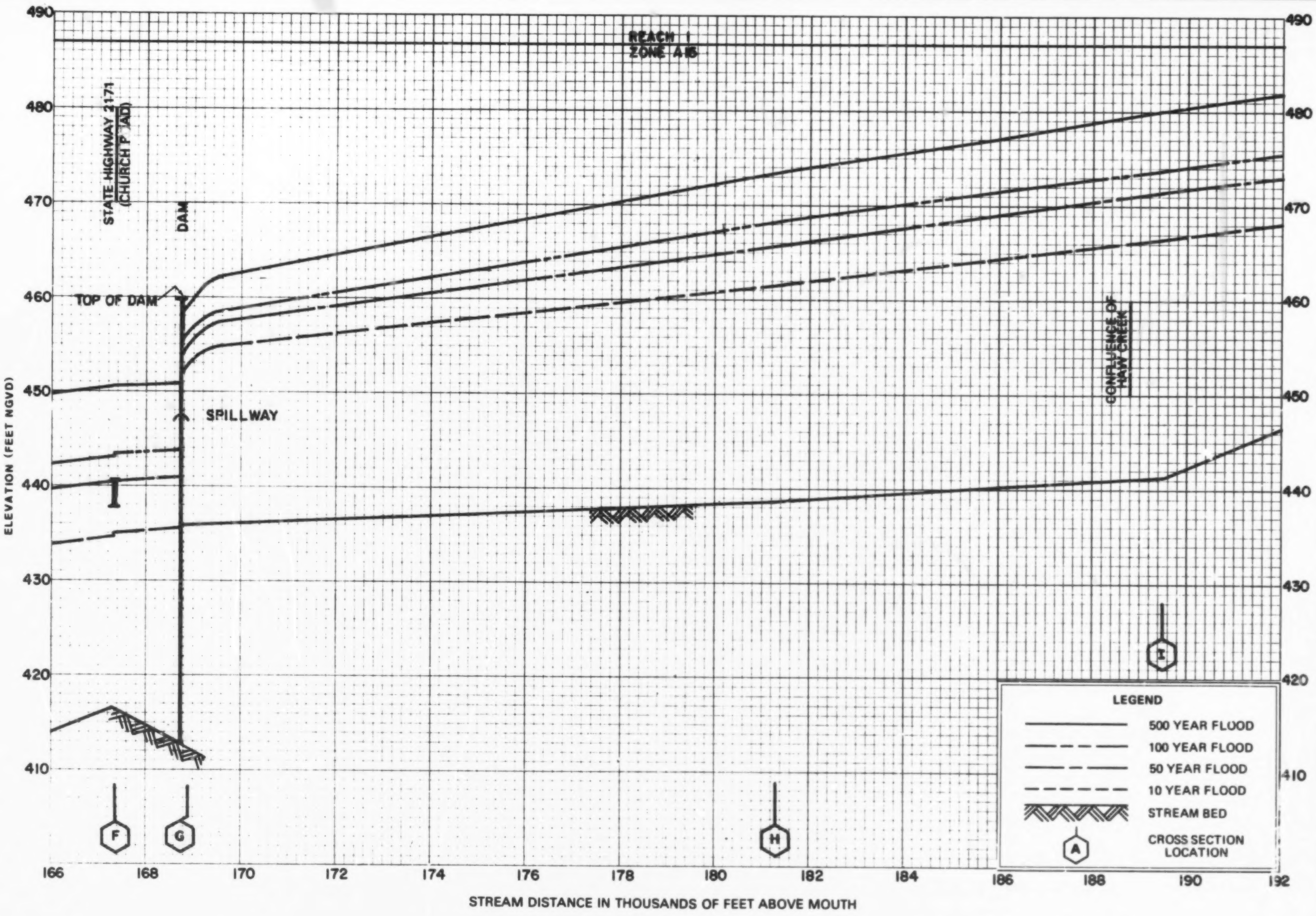


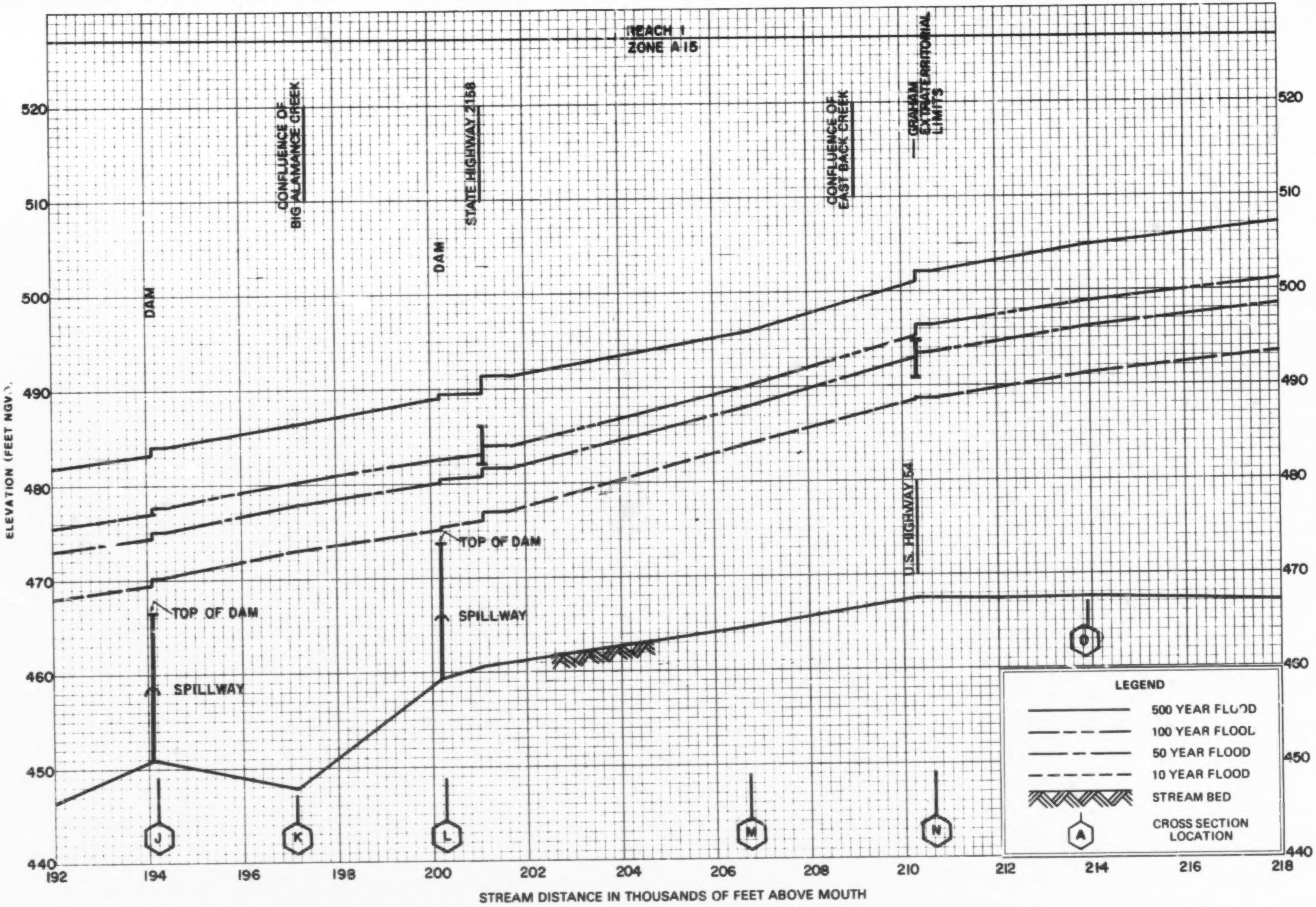
FLOOD PROFILES

HAW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

03P



FLOOD PROFILES

HAW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

04P

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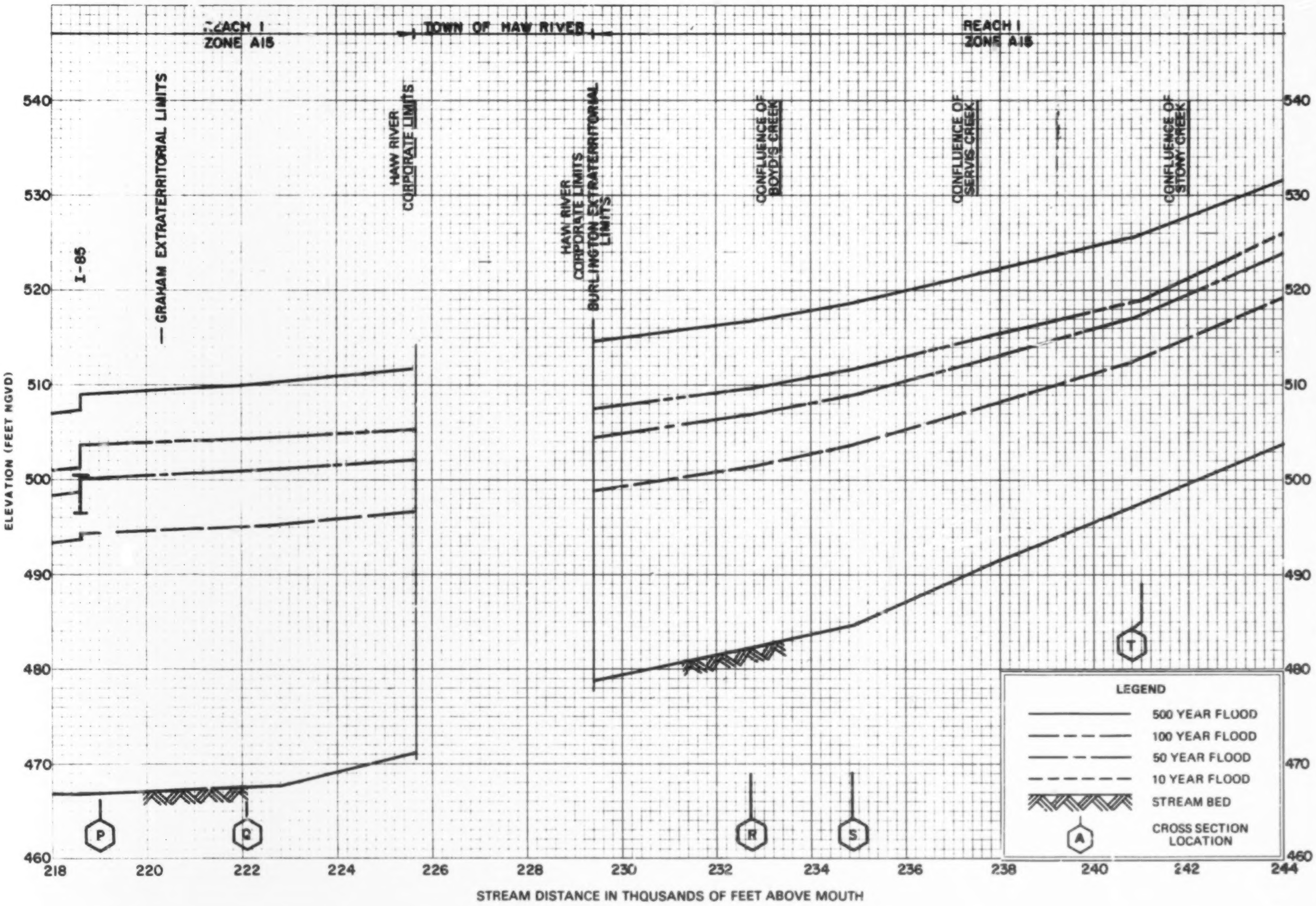

FLOOD PROFILES

HAW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

05P

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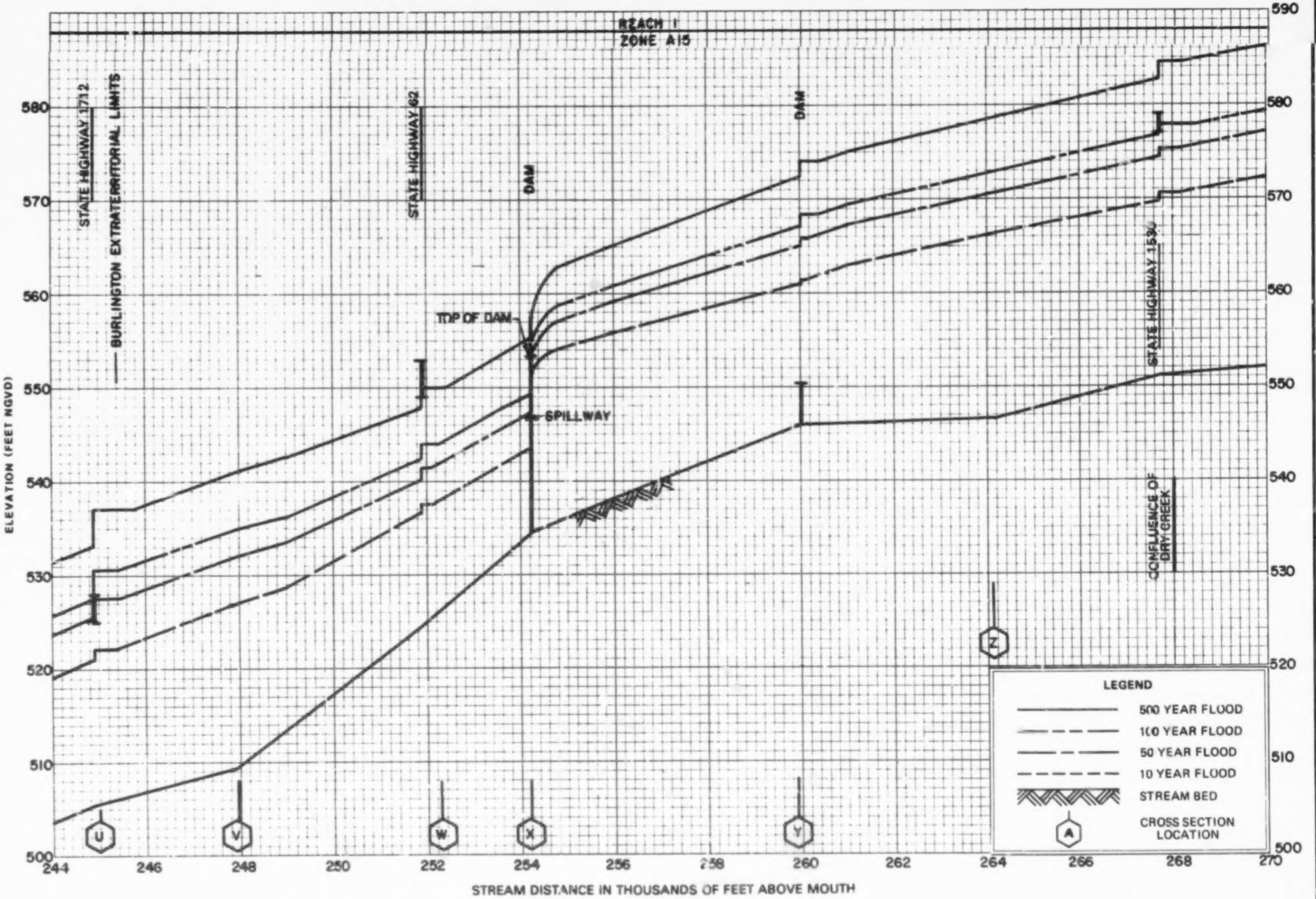

FLOOD PROFILES

HAW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

06P

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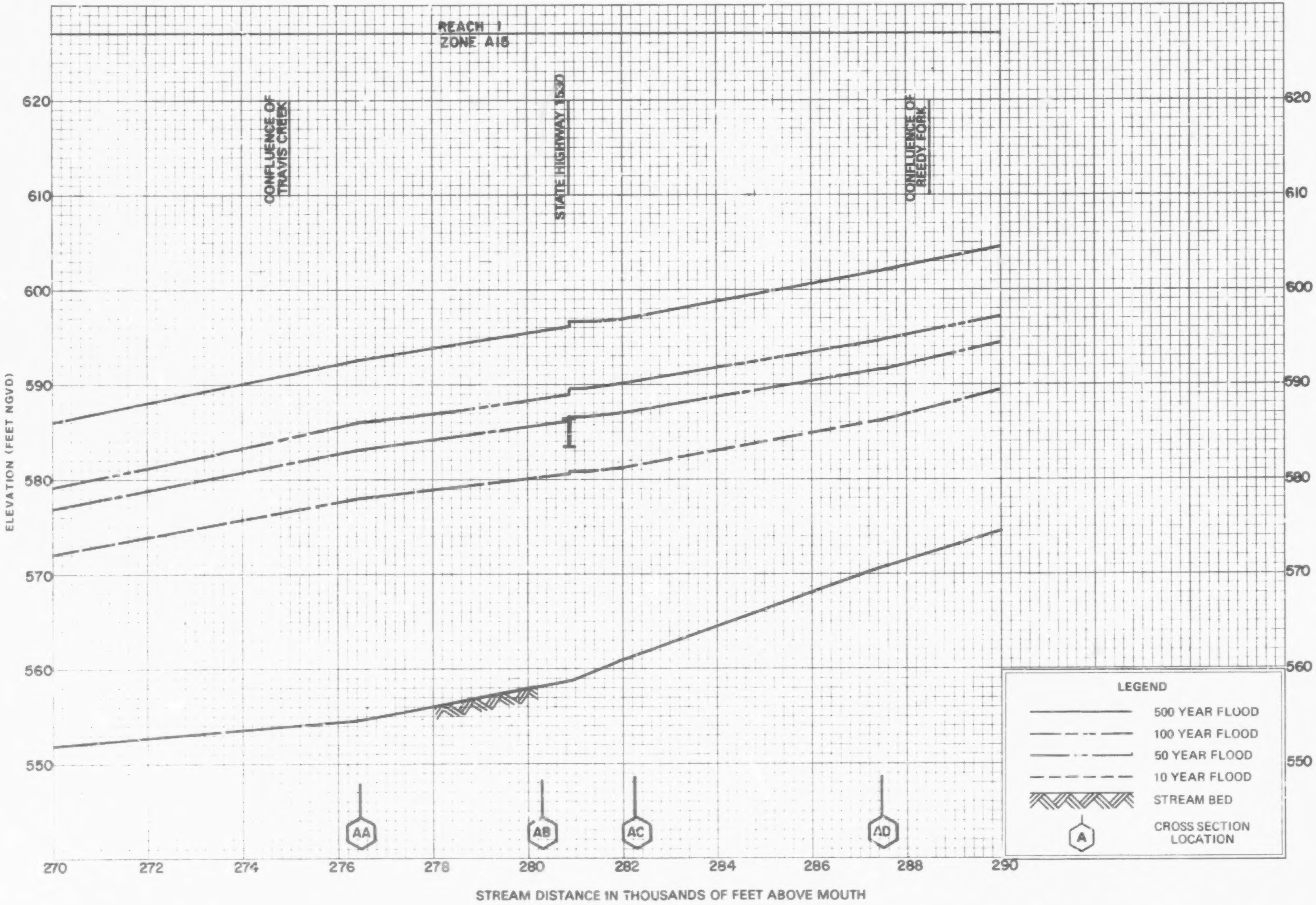

FLOOD PROFILES

HAW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

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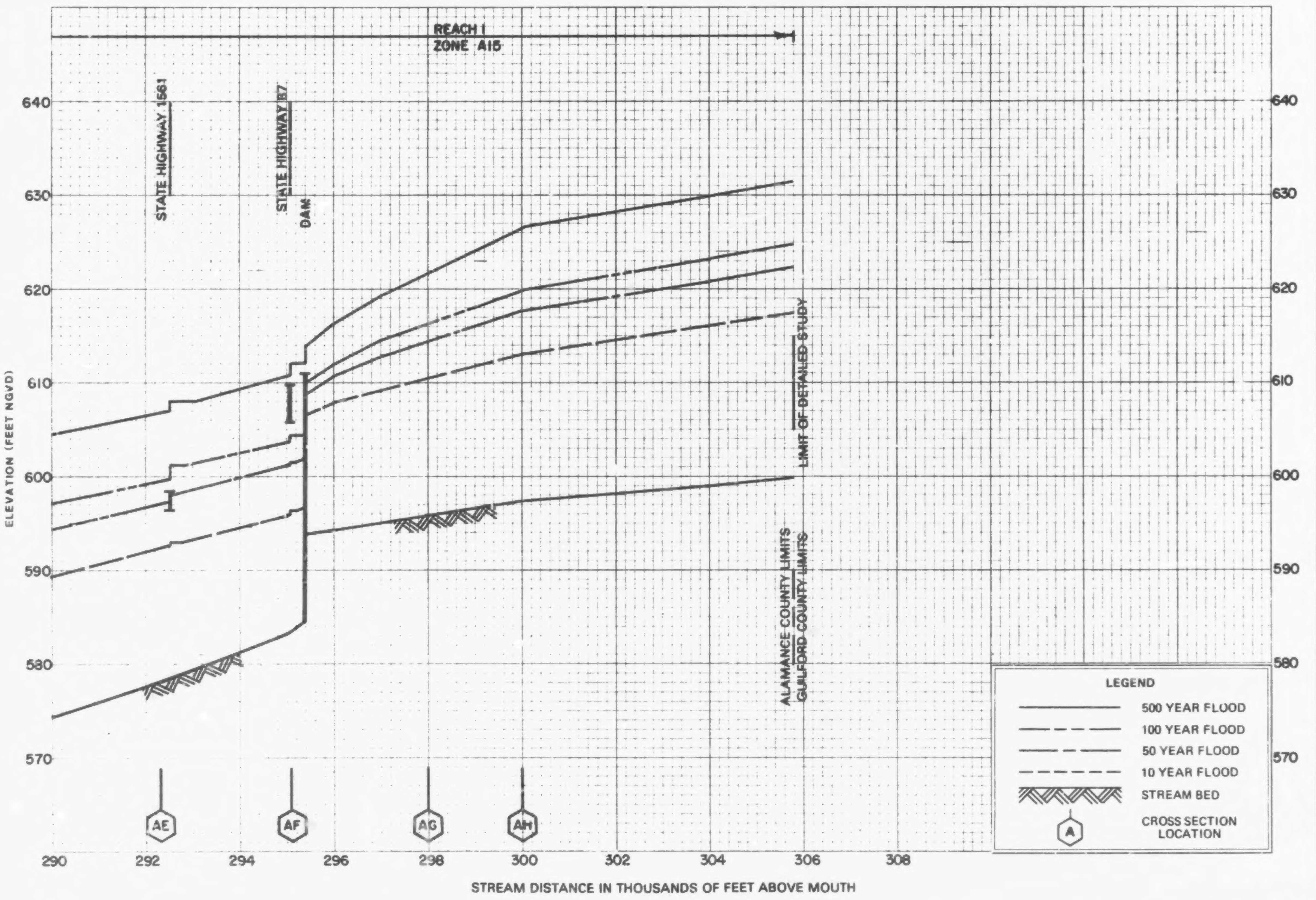

FLOOD PROFILES

HAW RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

08P

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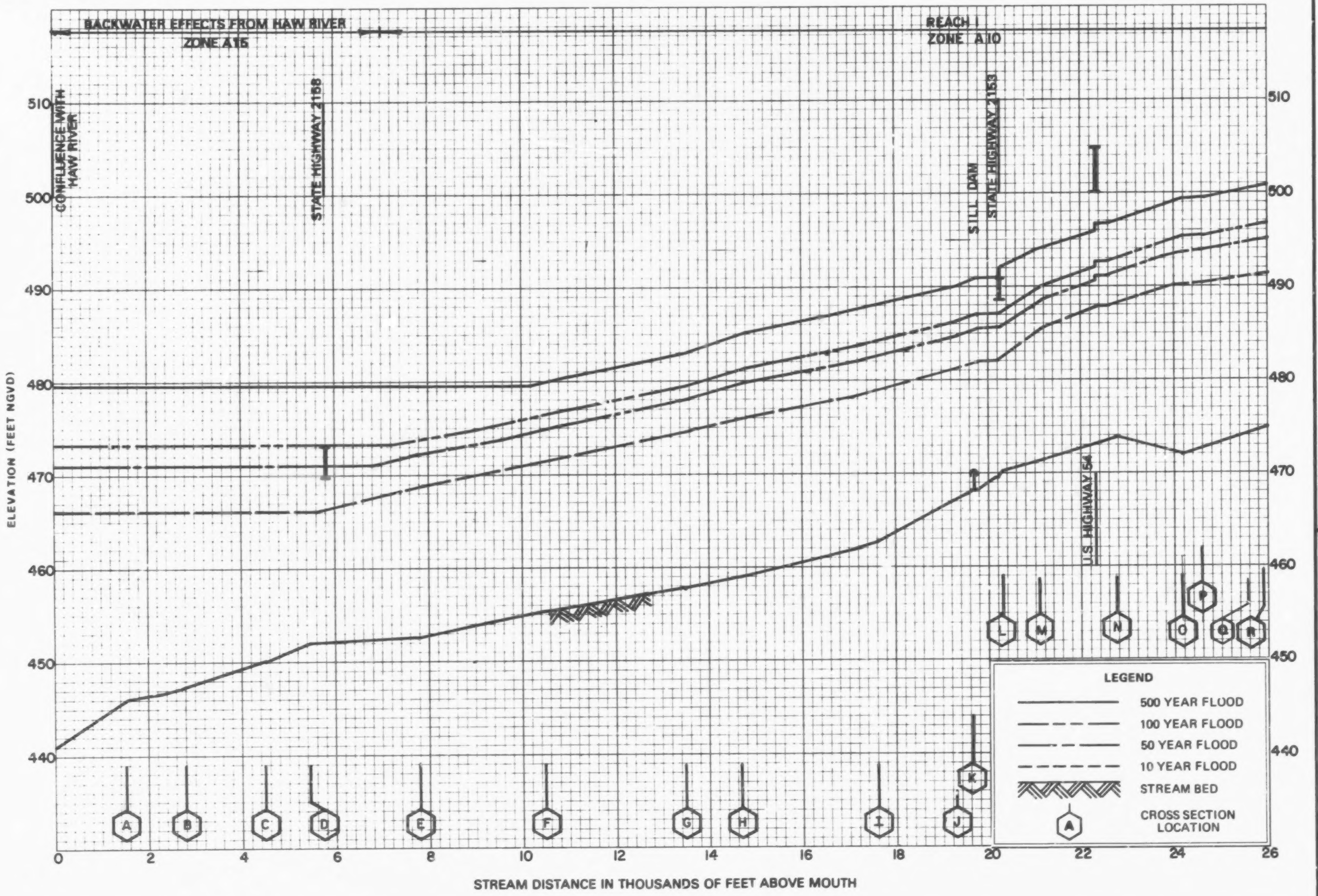

FLOOD PROFILES

HAW CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

09P

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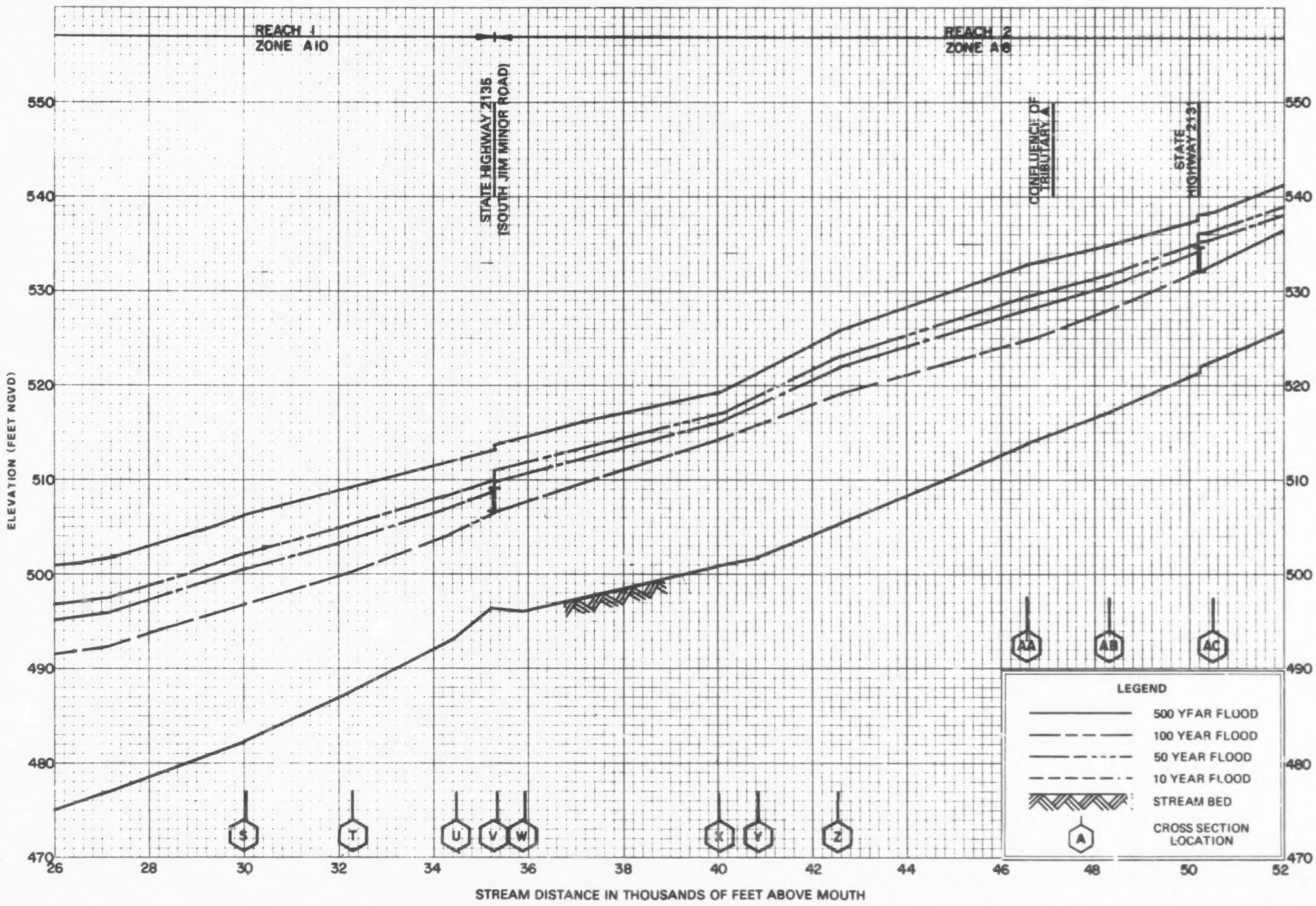

FLOOD PROFILES

HAW CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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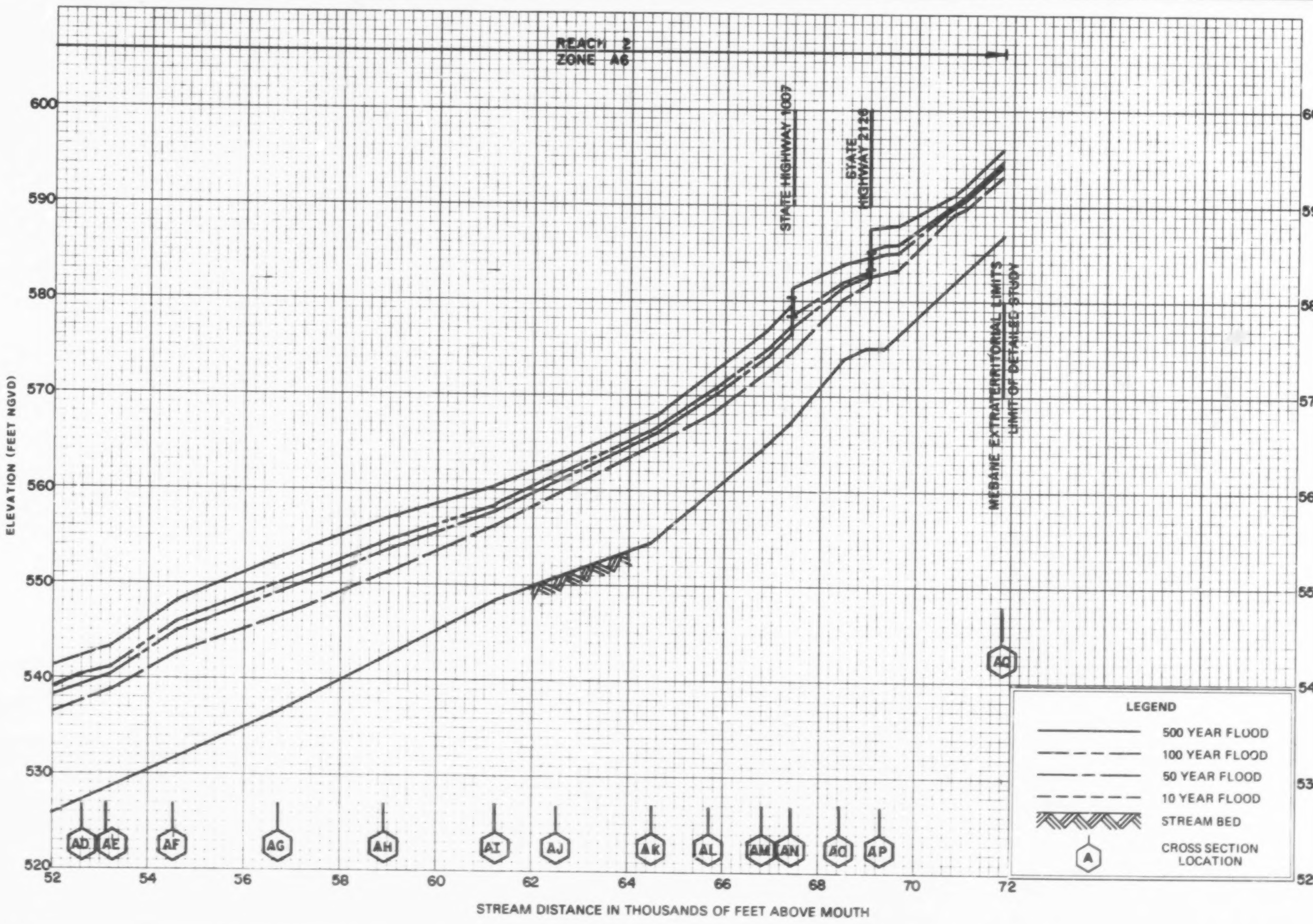


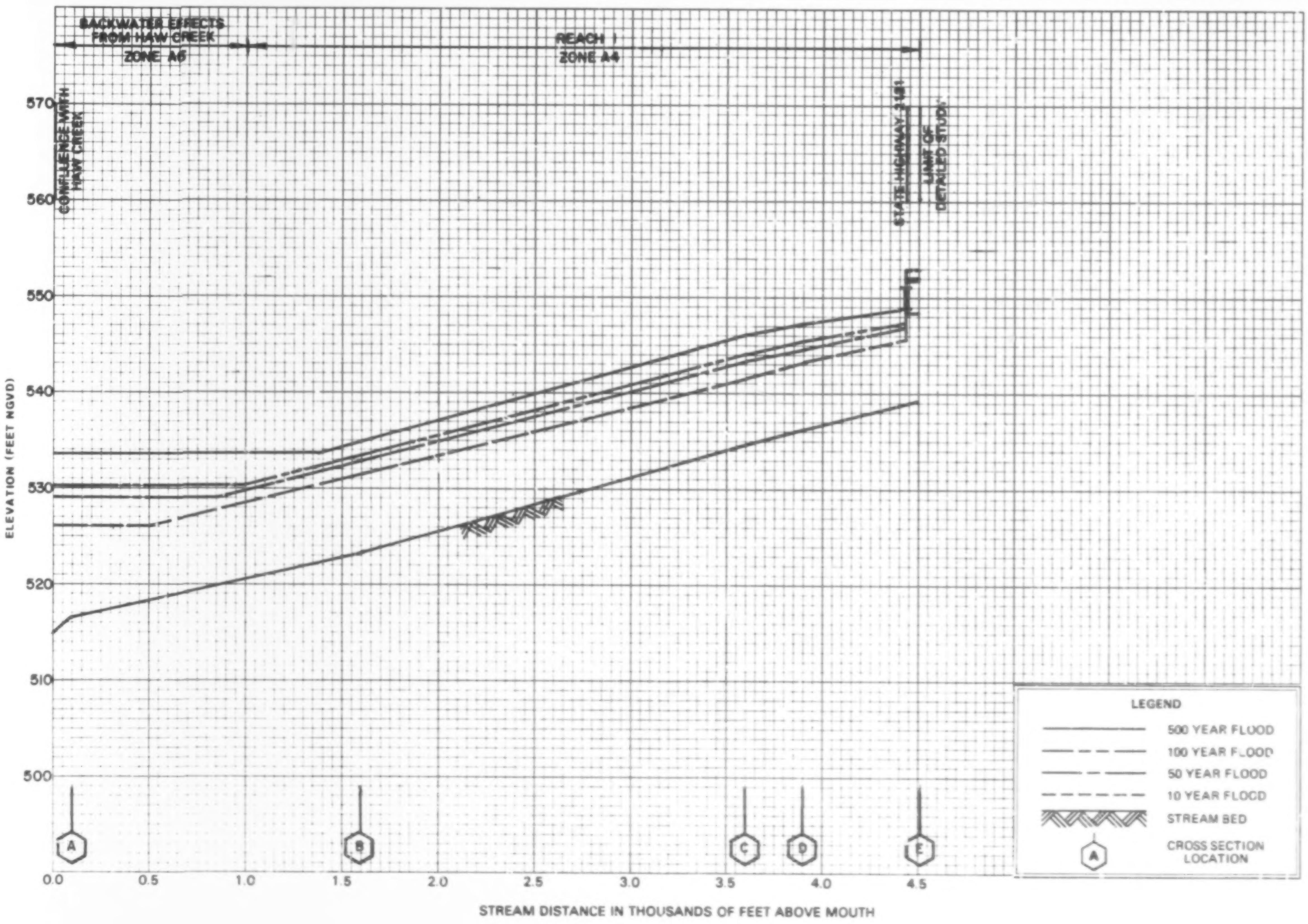
FLOOD PROFILES

HAW CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)



FLOOD PROFILES

TRIB. 'A' TO HAW CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

12P

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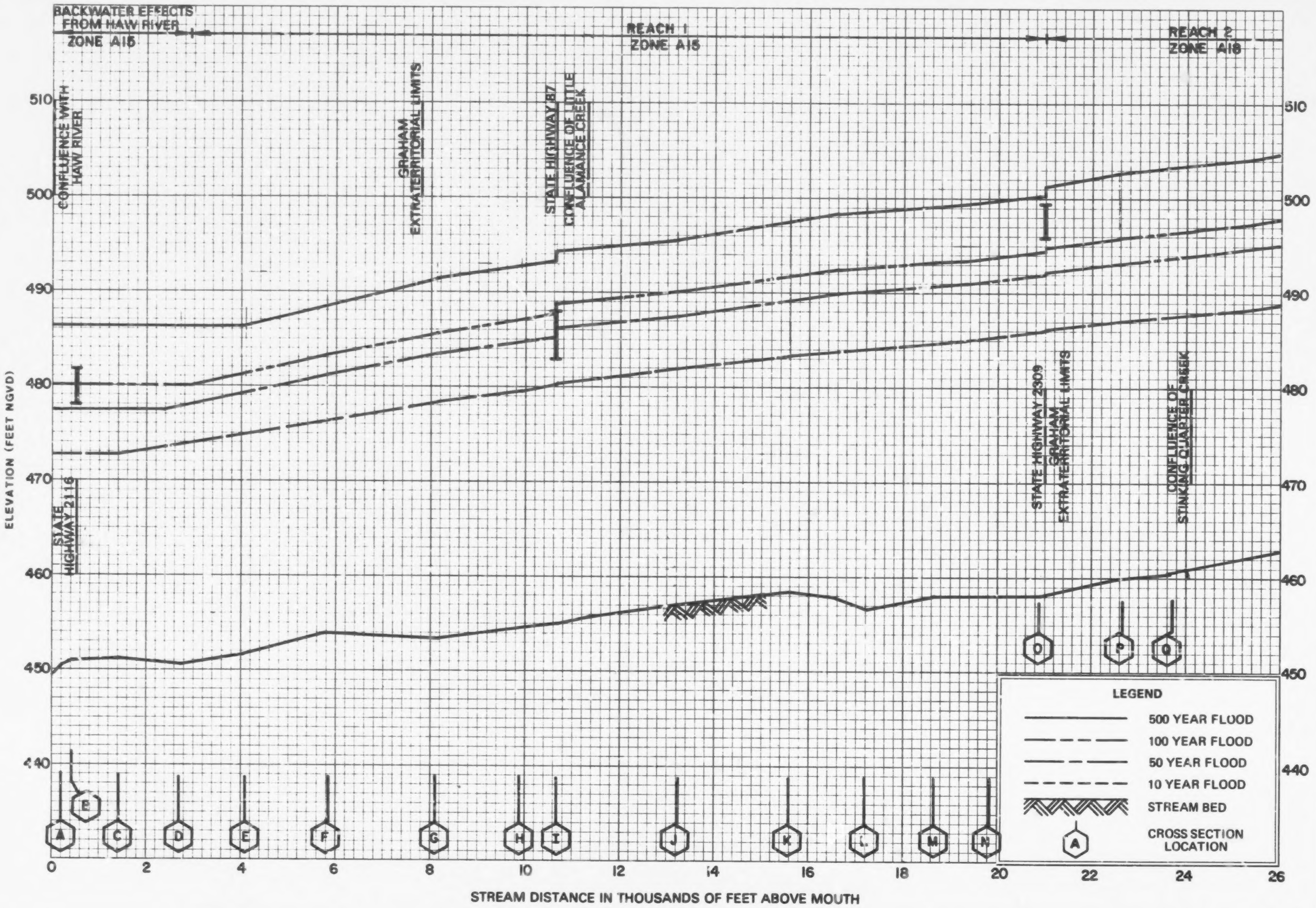

FLOOD PROFILES

BIG ALAMANCE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

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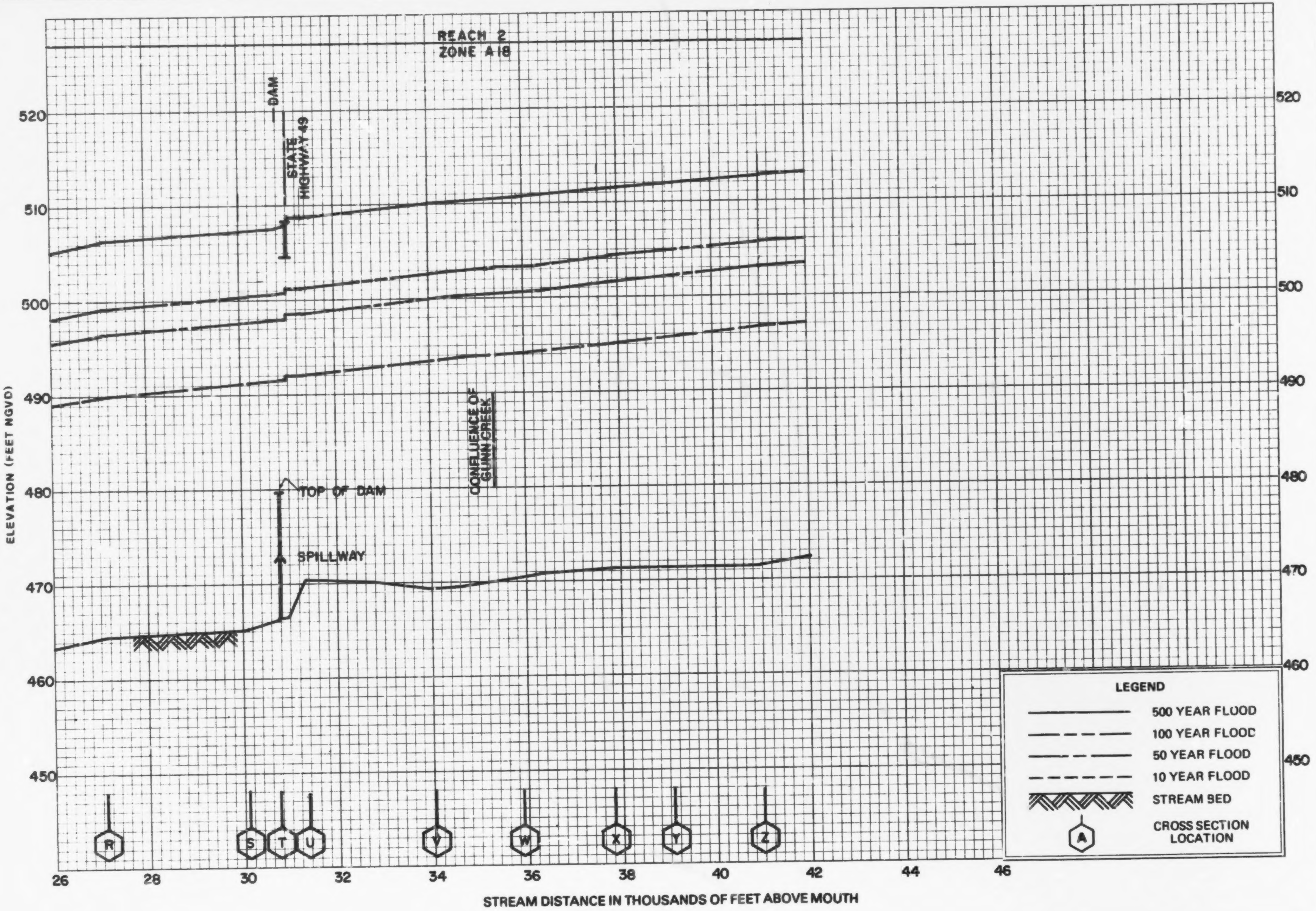
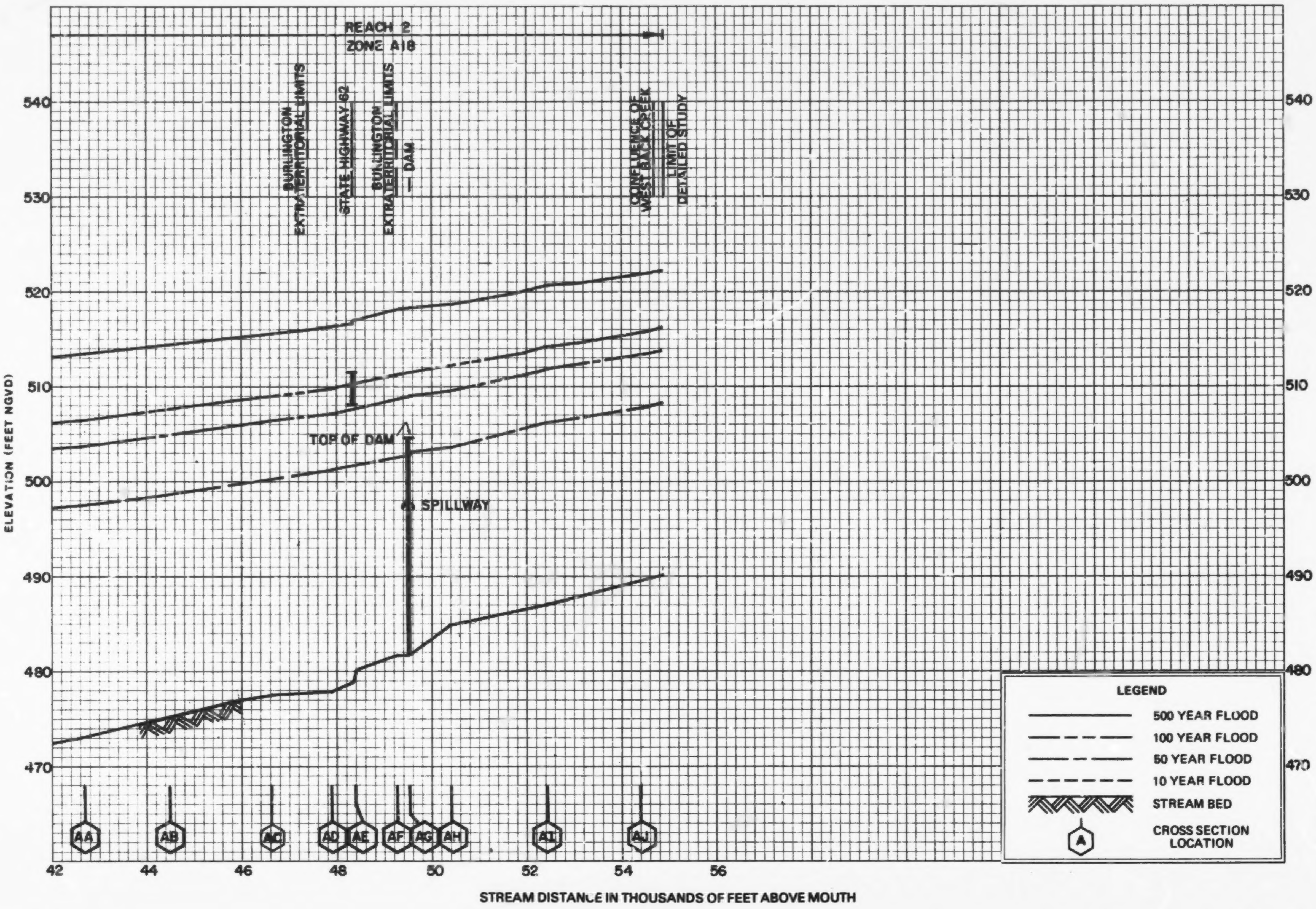


FLOOD PROFILES

BIG ALAMANCE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)



FLOOD PROFILES

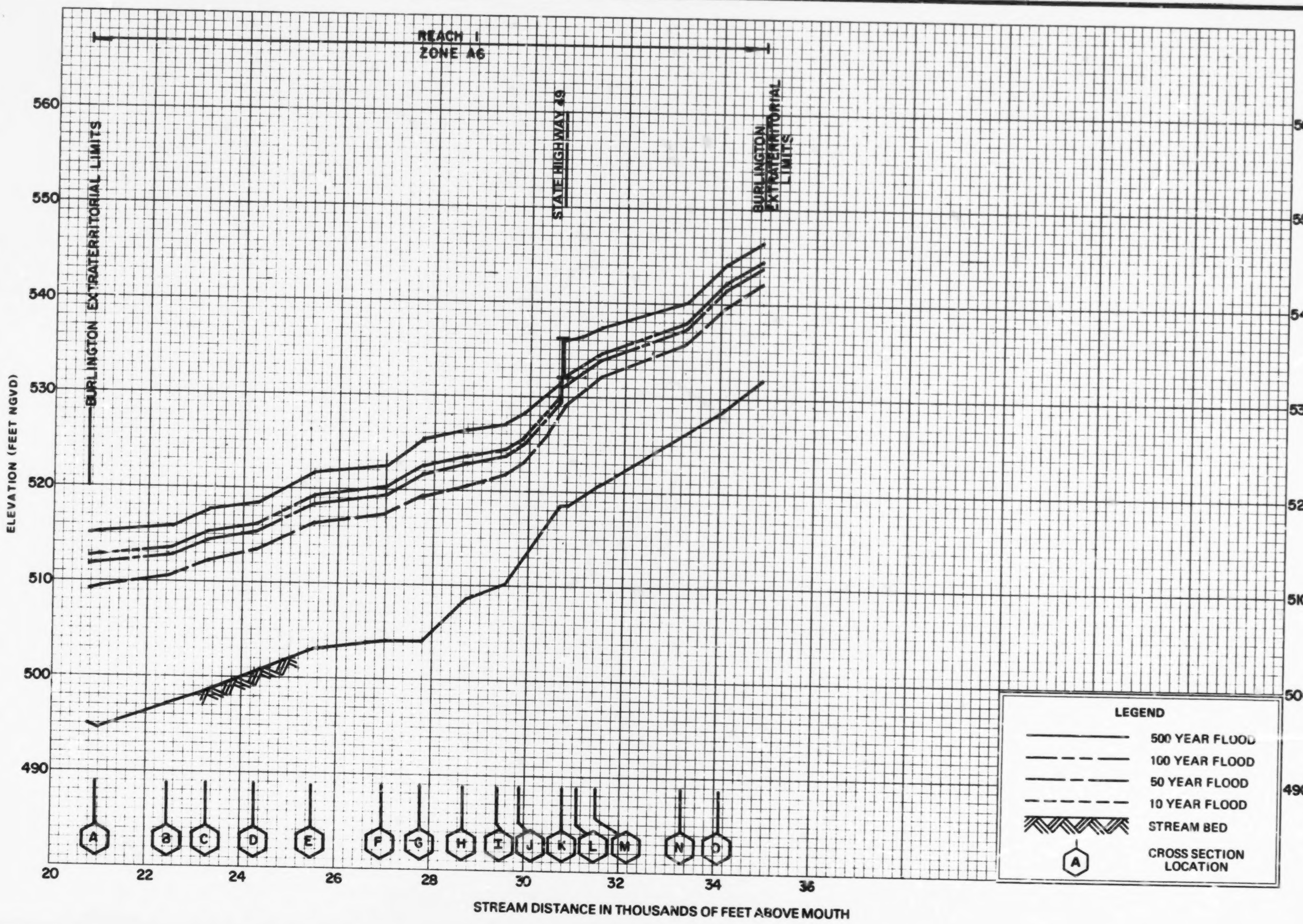
BIG ALAMANCE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

15P



FLOOD PROFILES

LITTLE ALAMANCE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

16P

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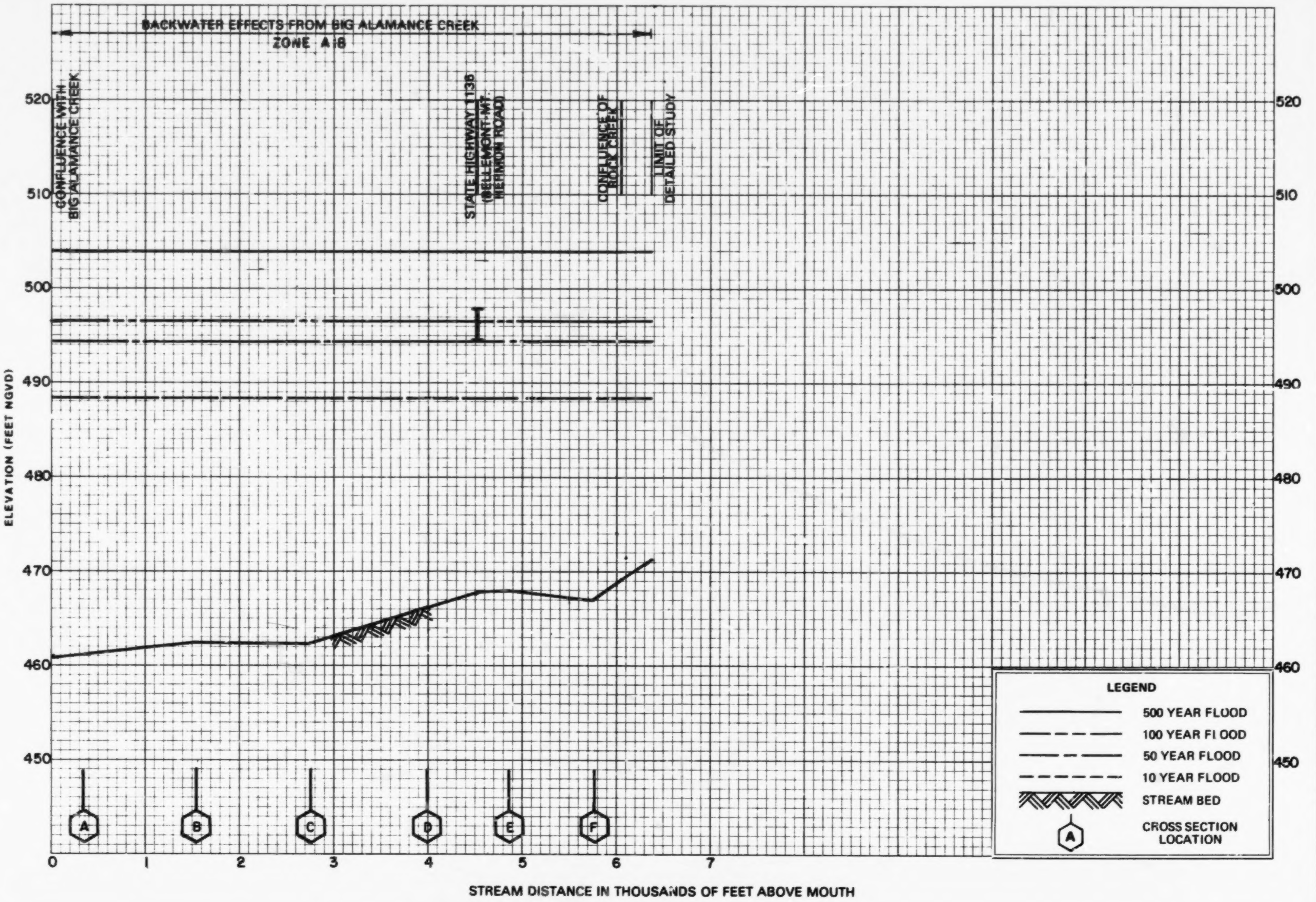

FLOOD PROFILES

STINKING QUARTER CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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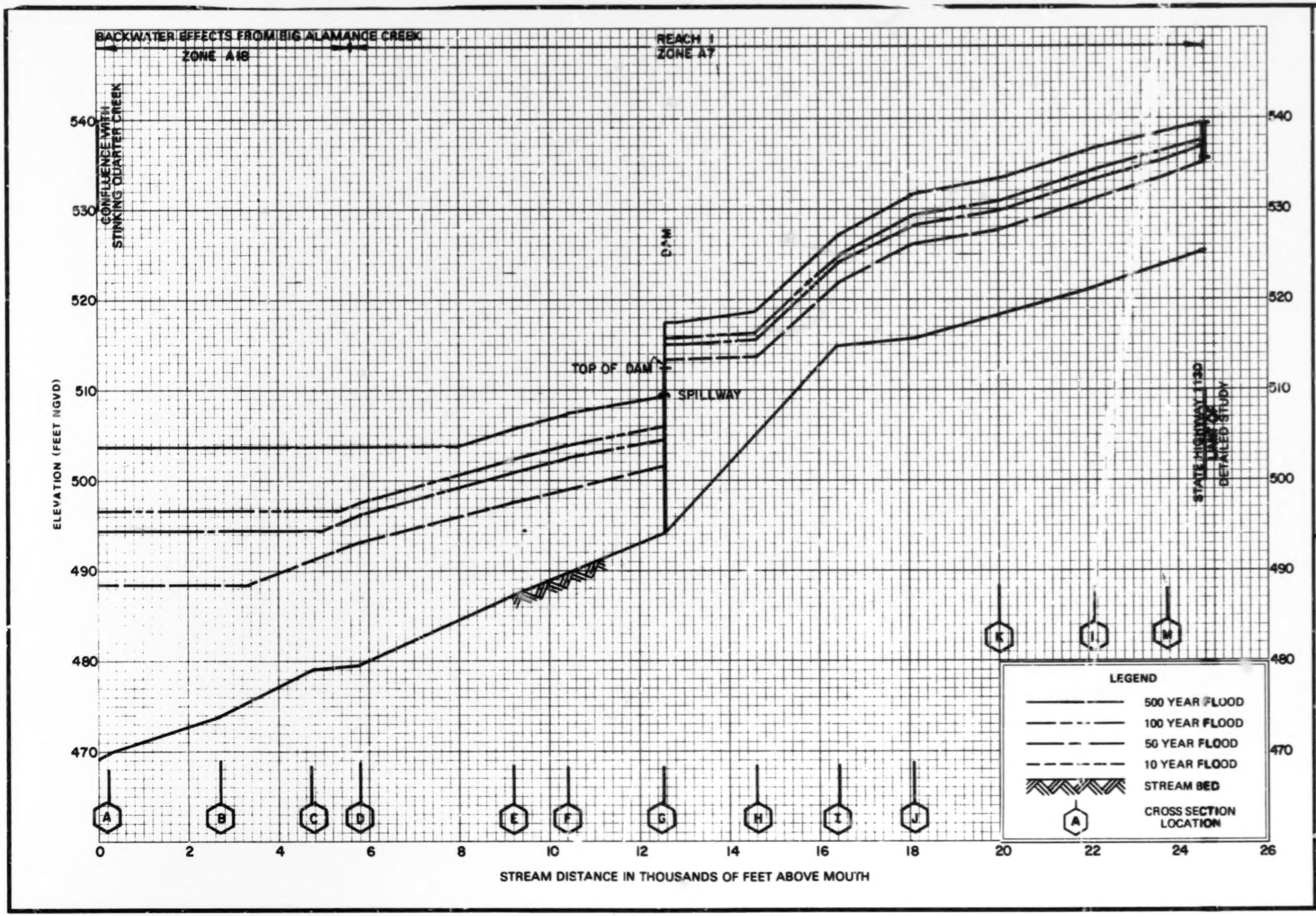

FLOOD PROFILES

ROCK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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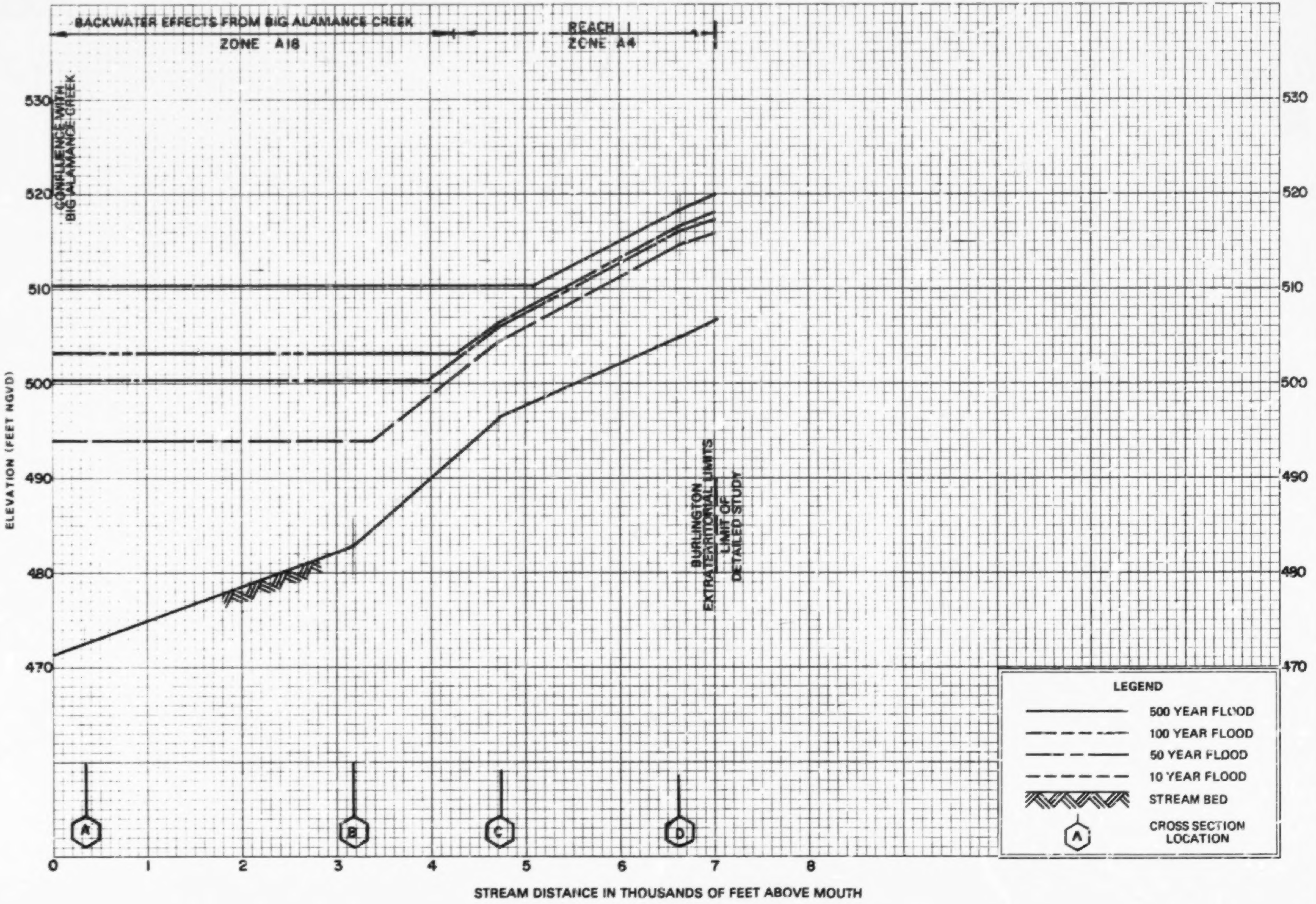

FLOOD PROFILES

GUNN CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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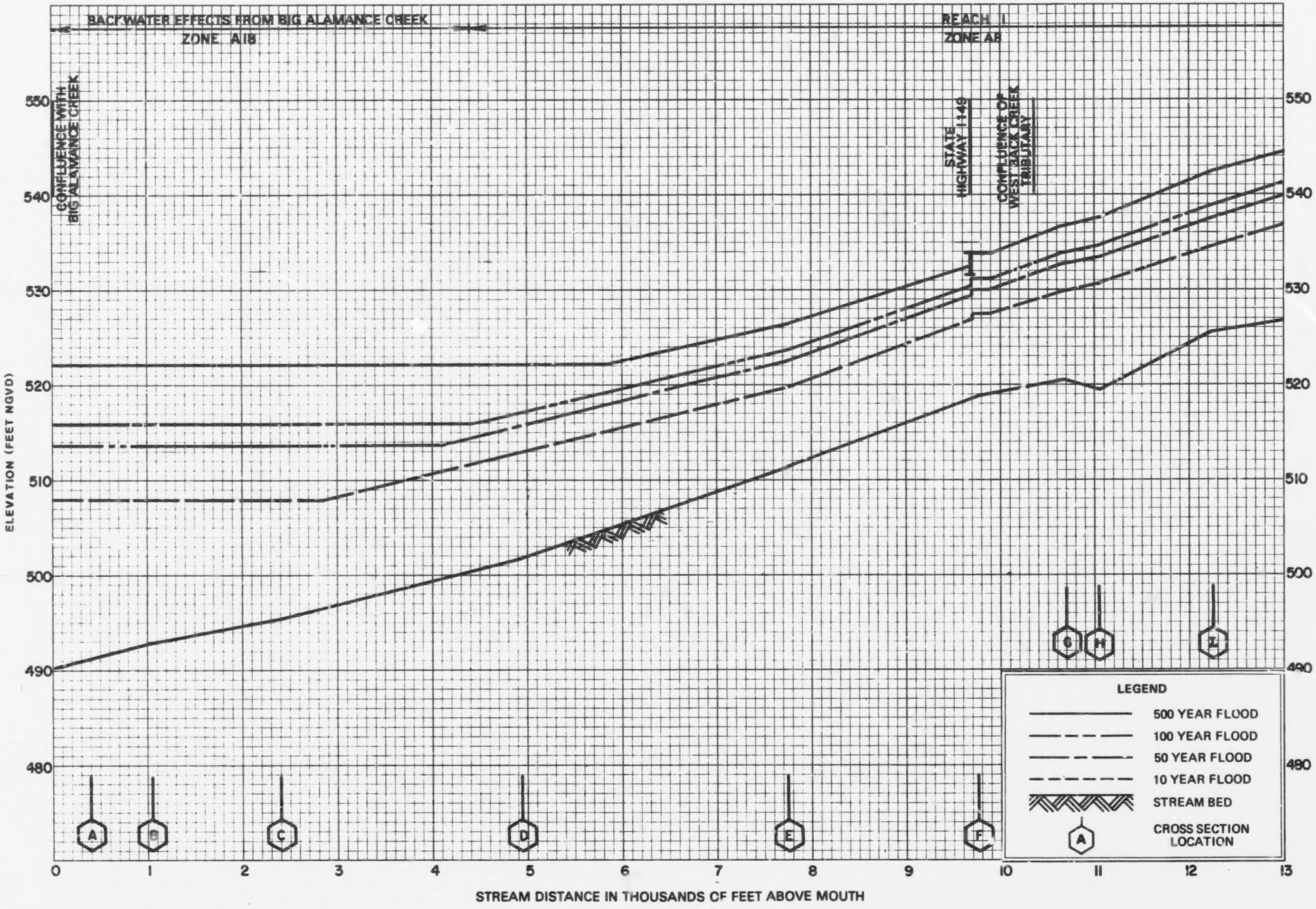

FLOOD PROFILES

WEST BACK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

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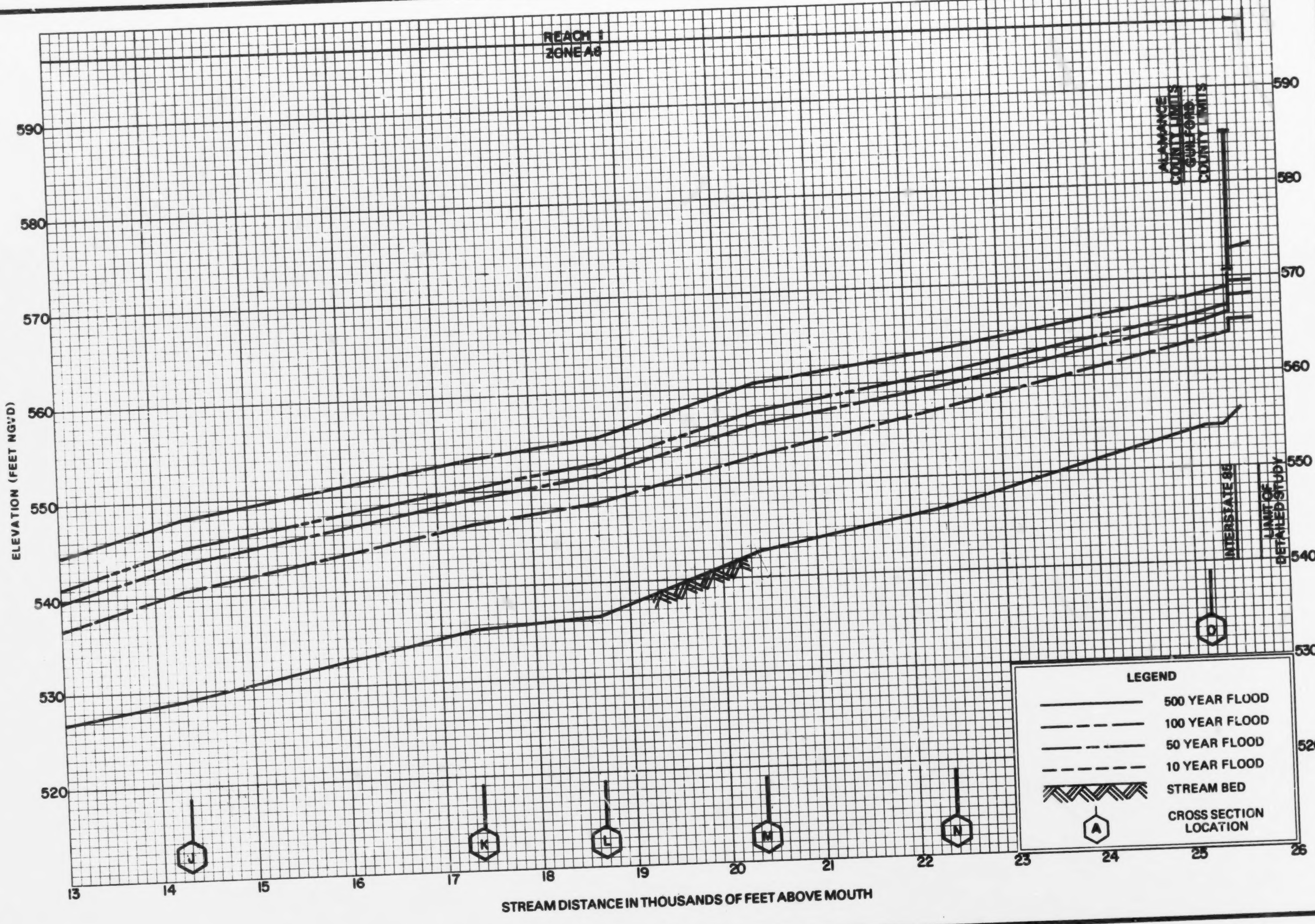

FLOOD PROFILES

WEST BACK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

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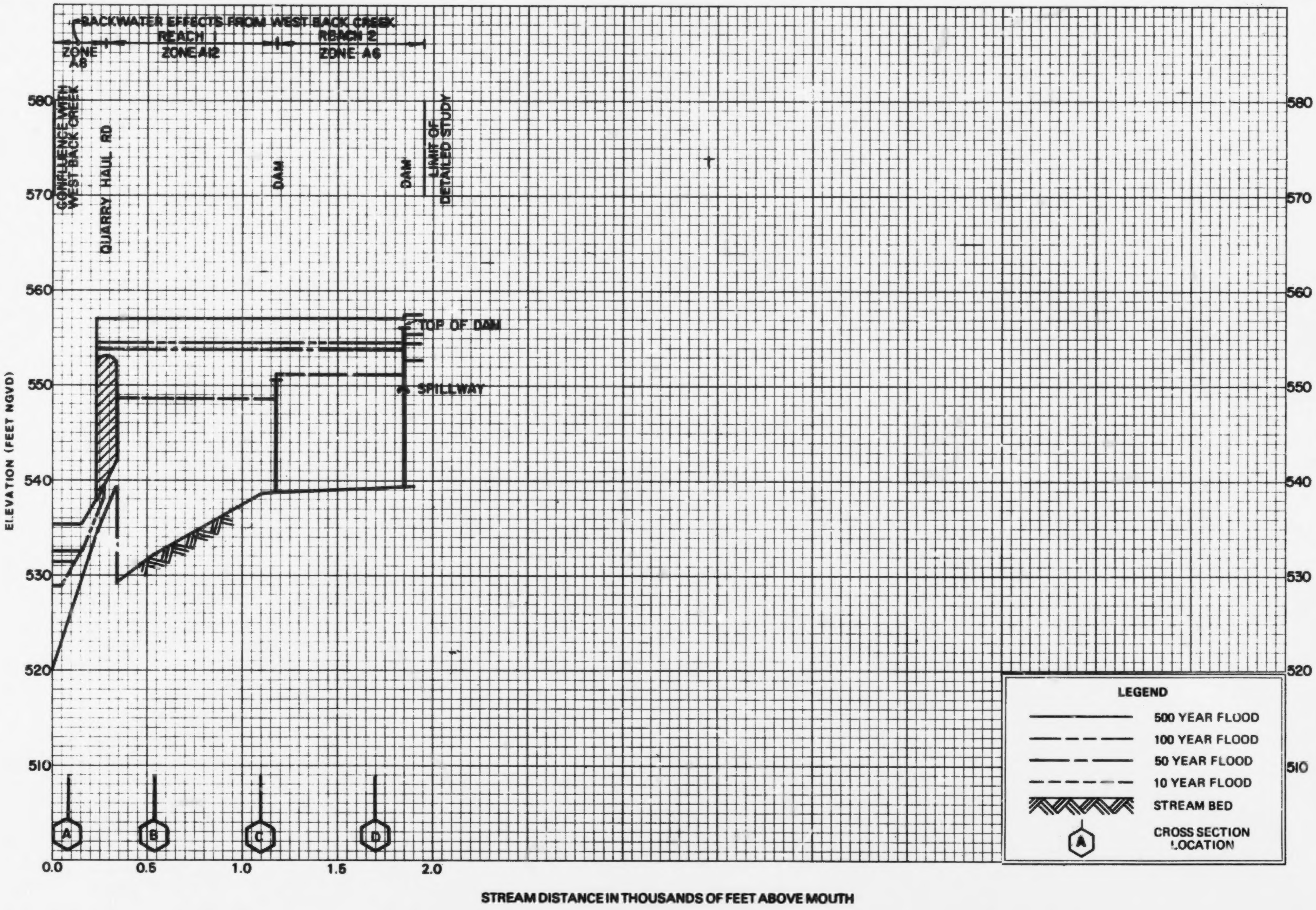

FLOOD PROFILES

WEST BACK CREEK TRIB.

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

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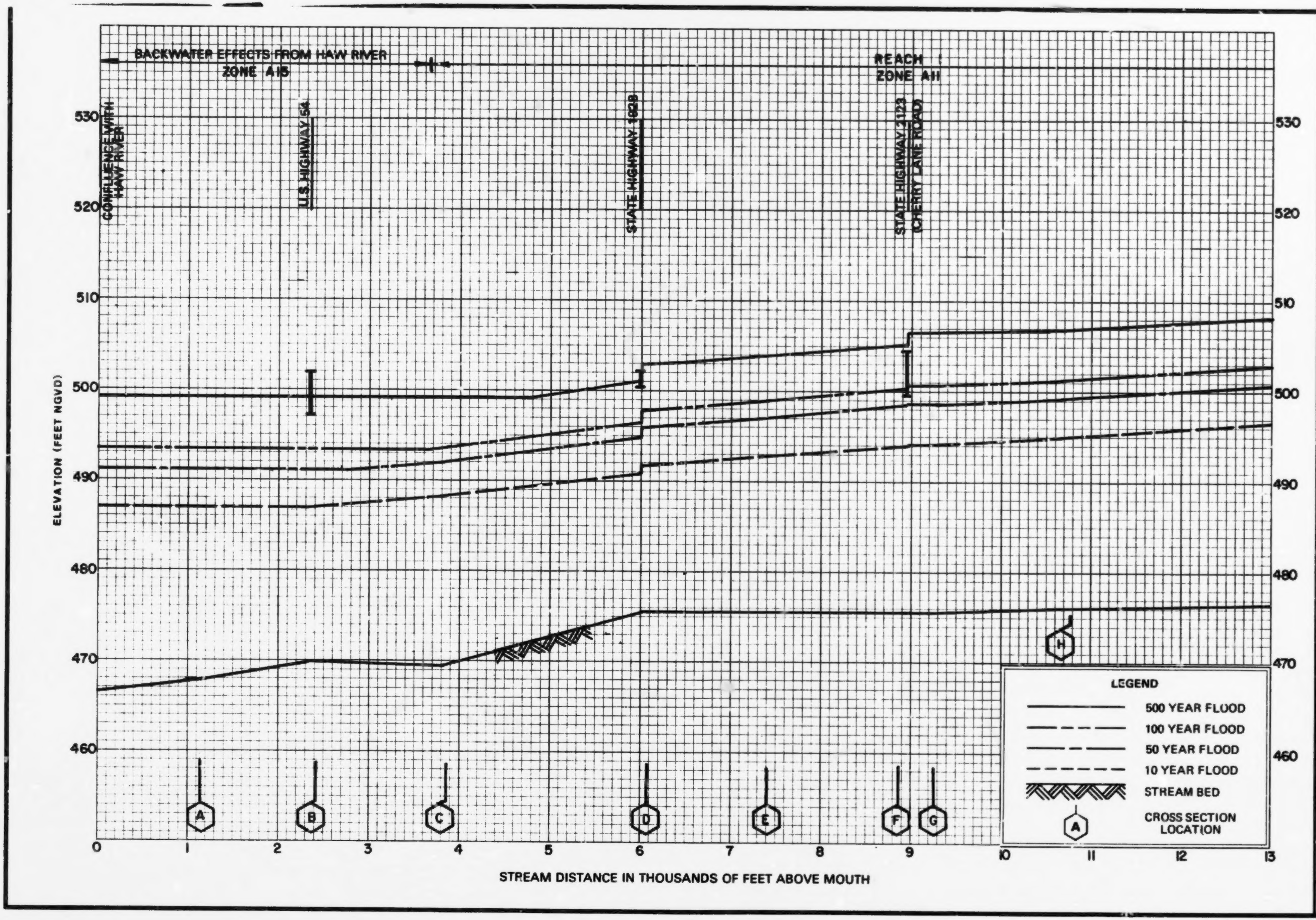

FLOOD PROFILES

EAST BACK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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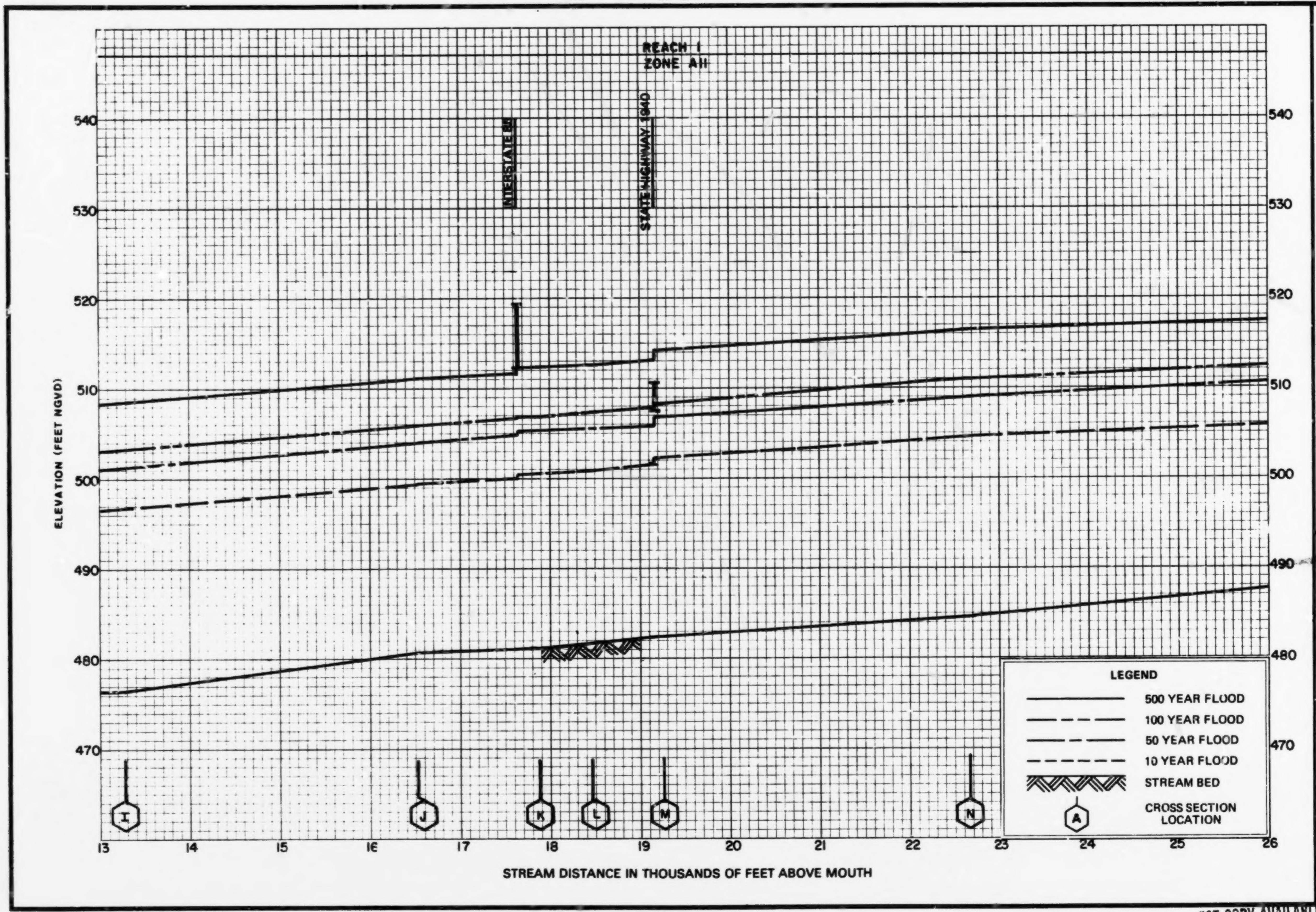

FLOOD PROFILES

EAST BACK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

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ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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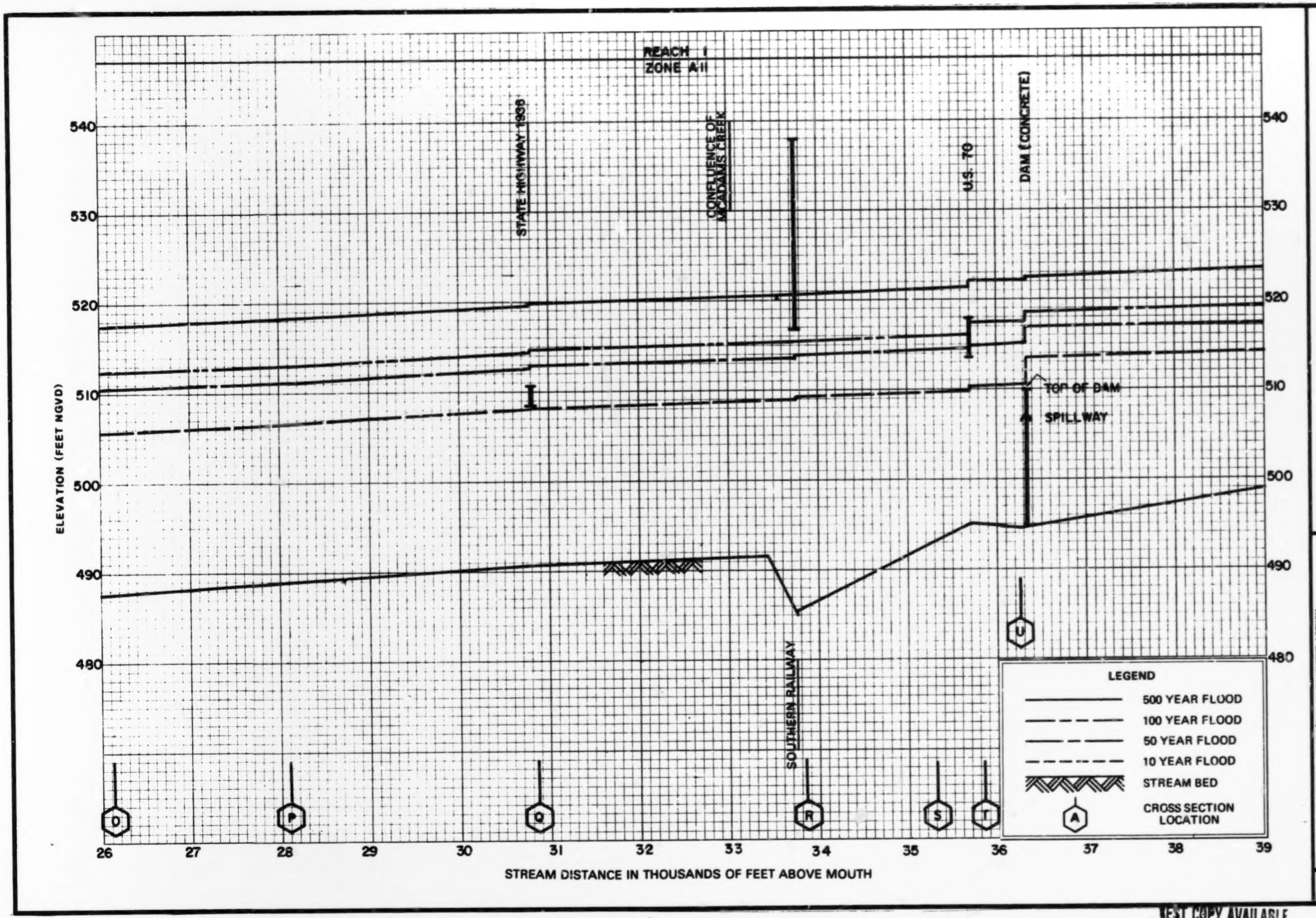

FLOOD PROFILES

EAST BACK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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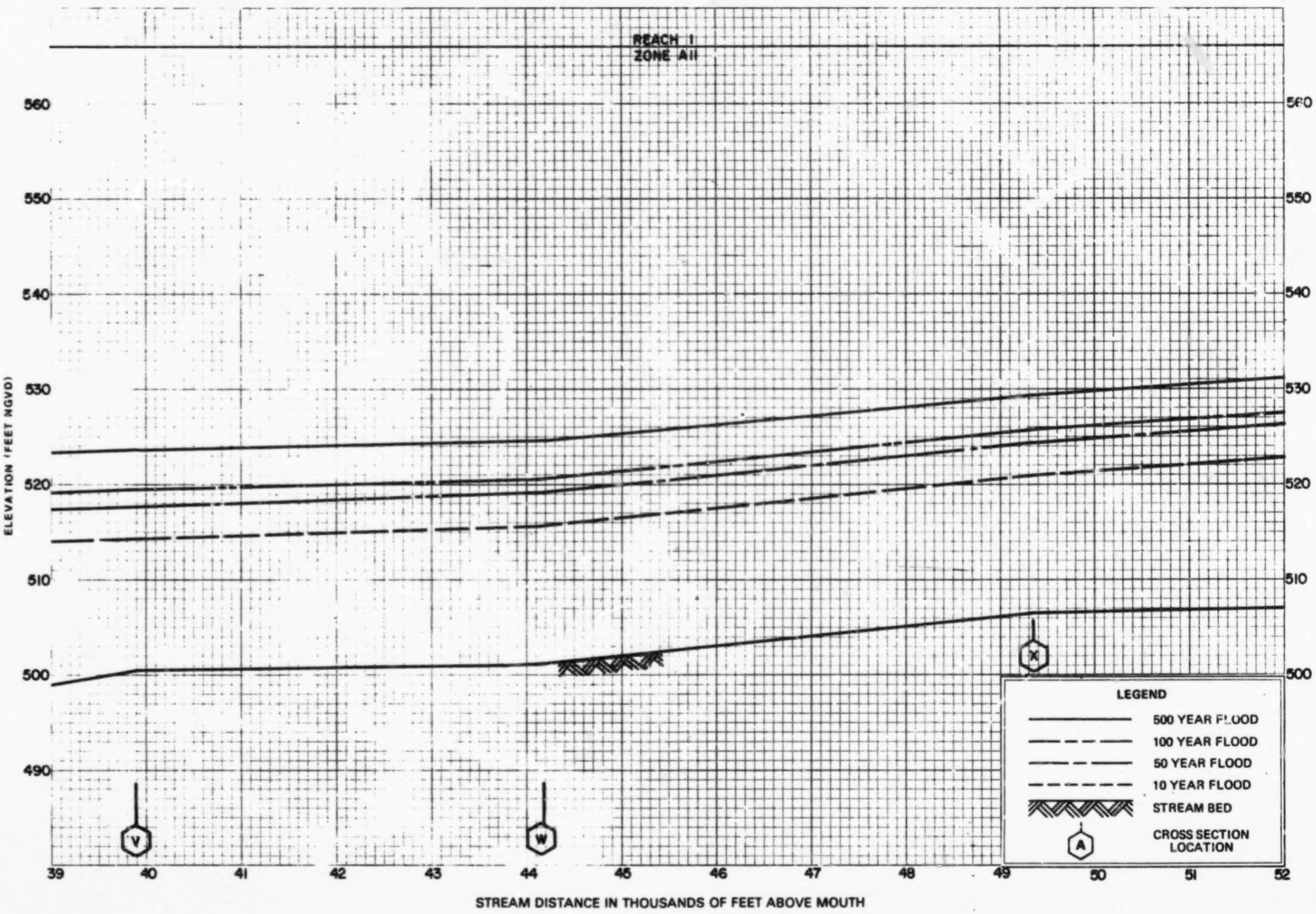

FLOOD PROFILES

EAST BACK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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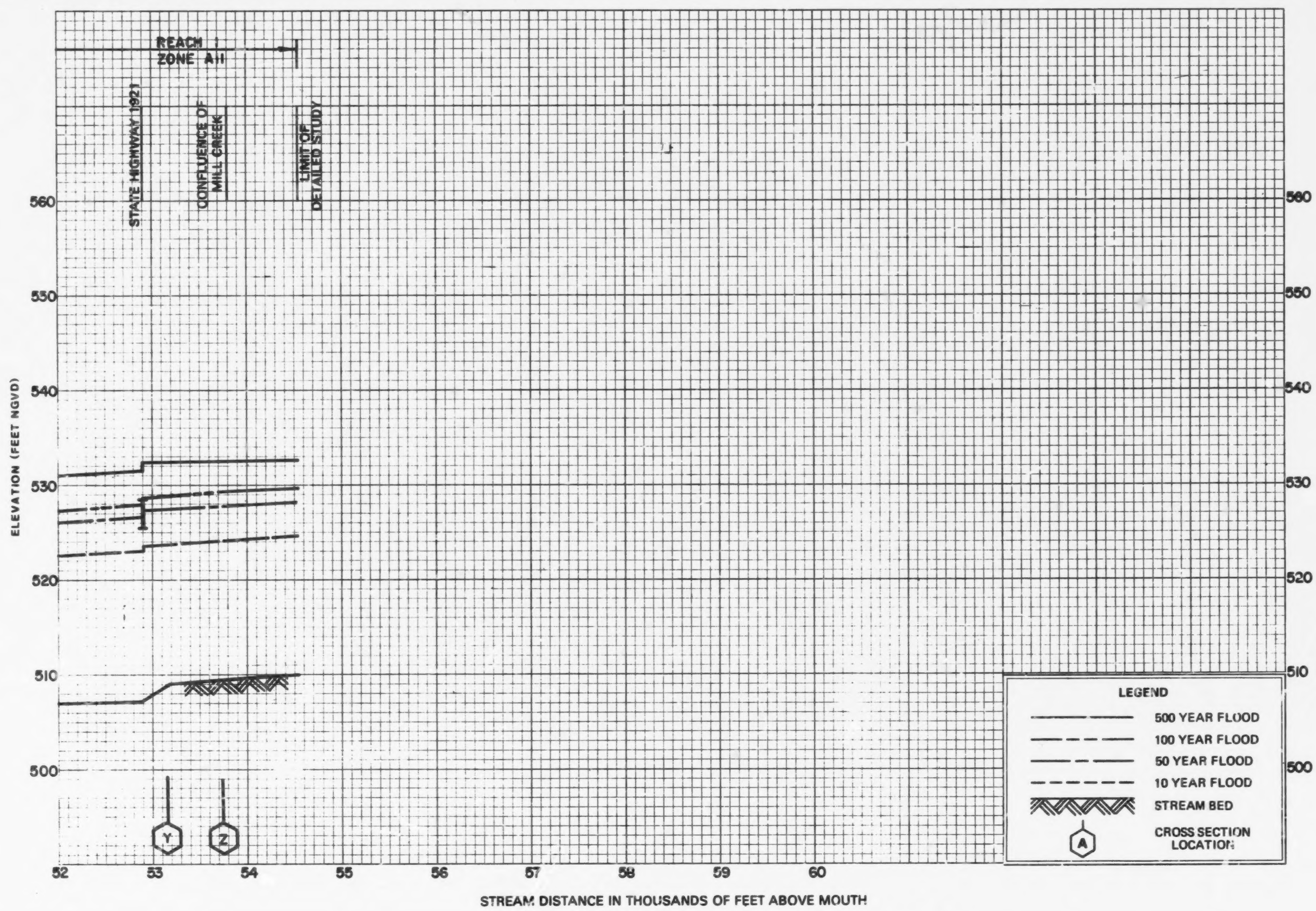

FLOOD PROFILES

EAST BACK CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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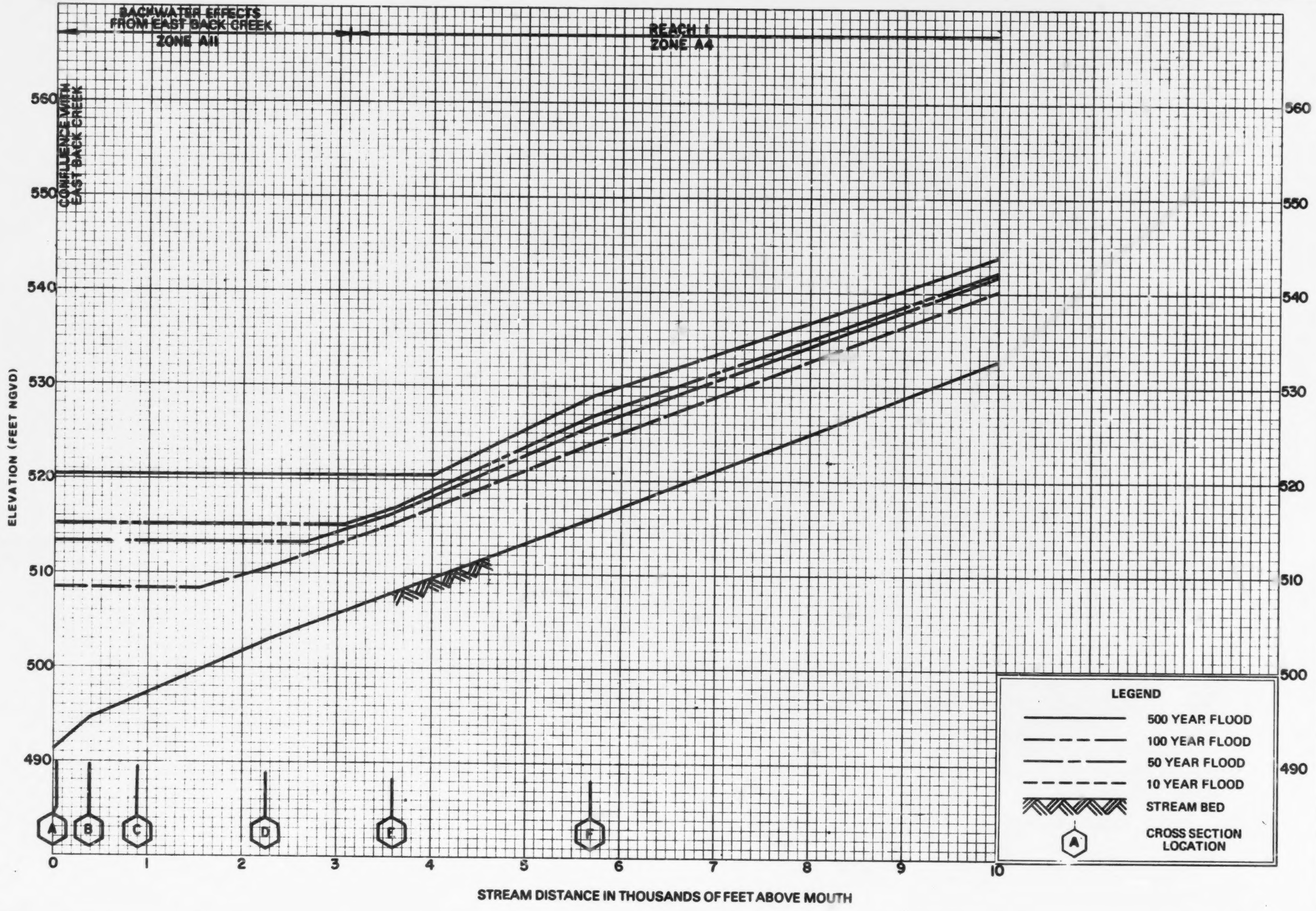
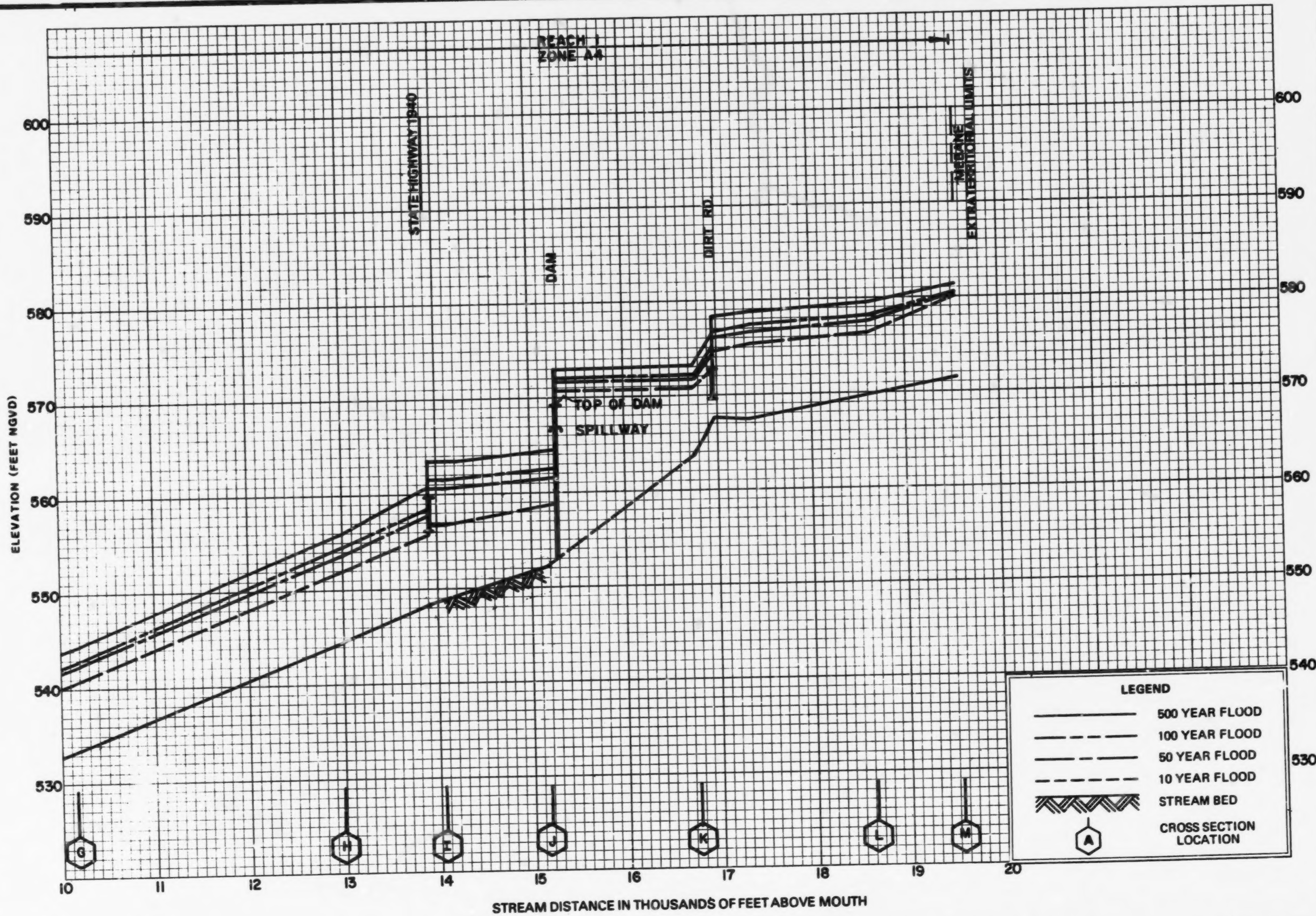


FLOOD PROFILES

McADAMS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)



FLOOD PROFILES

McADAMS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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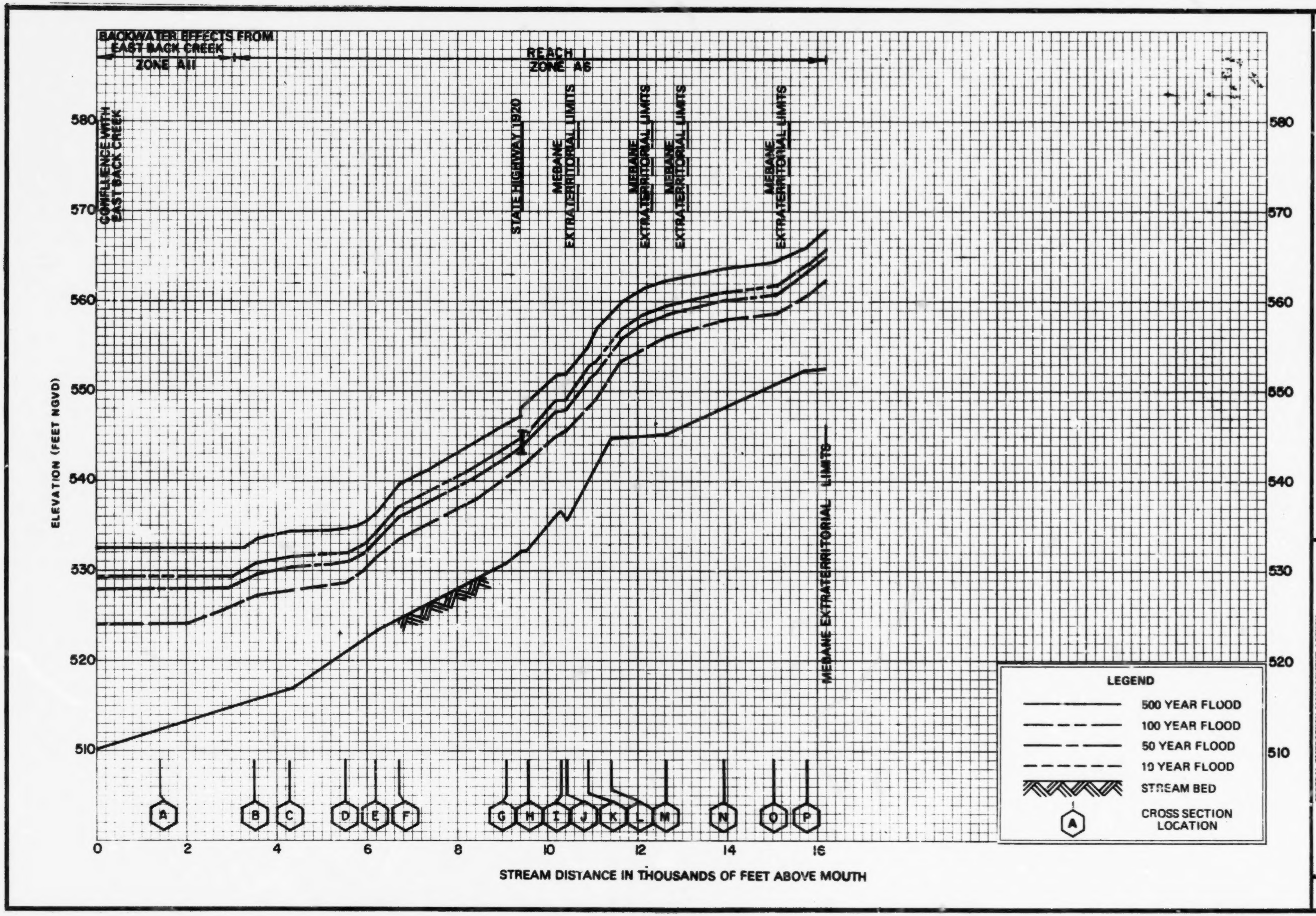


FLOOD PROFILES

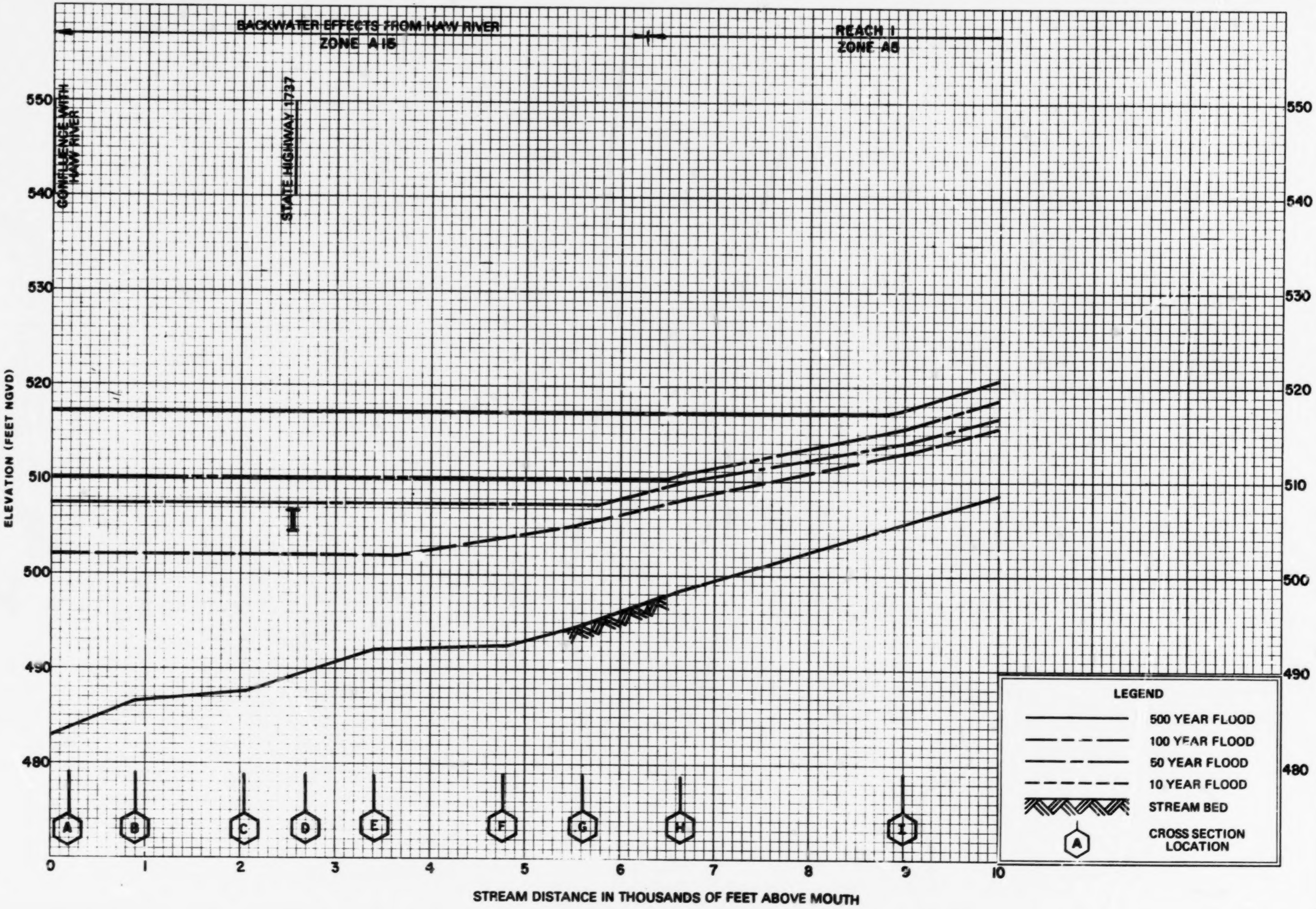
MILL CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

30P



FLOOD PROFILES

BOYDS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

31P

71

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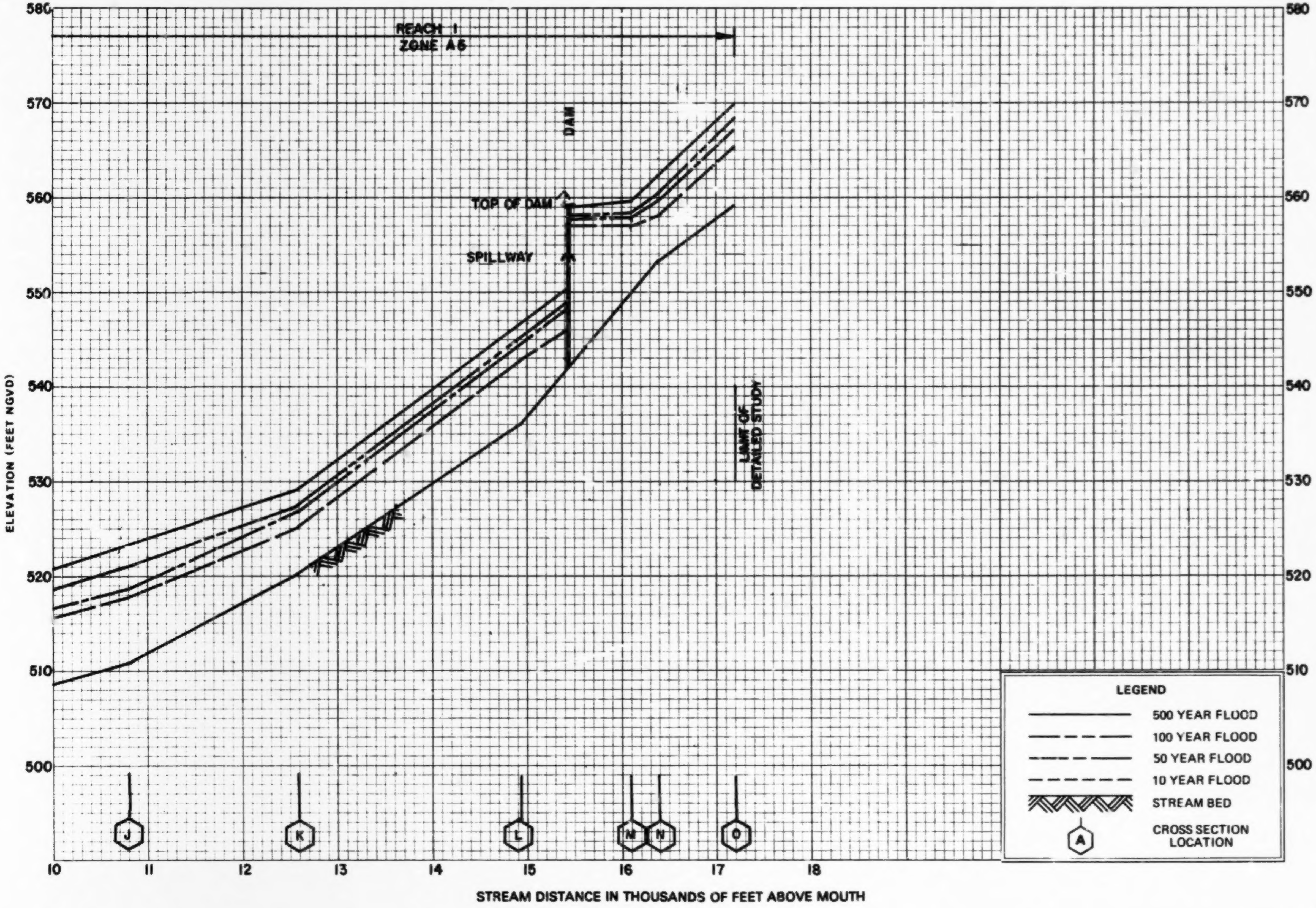

FLOOD PROFILES

BOYDS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

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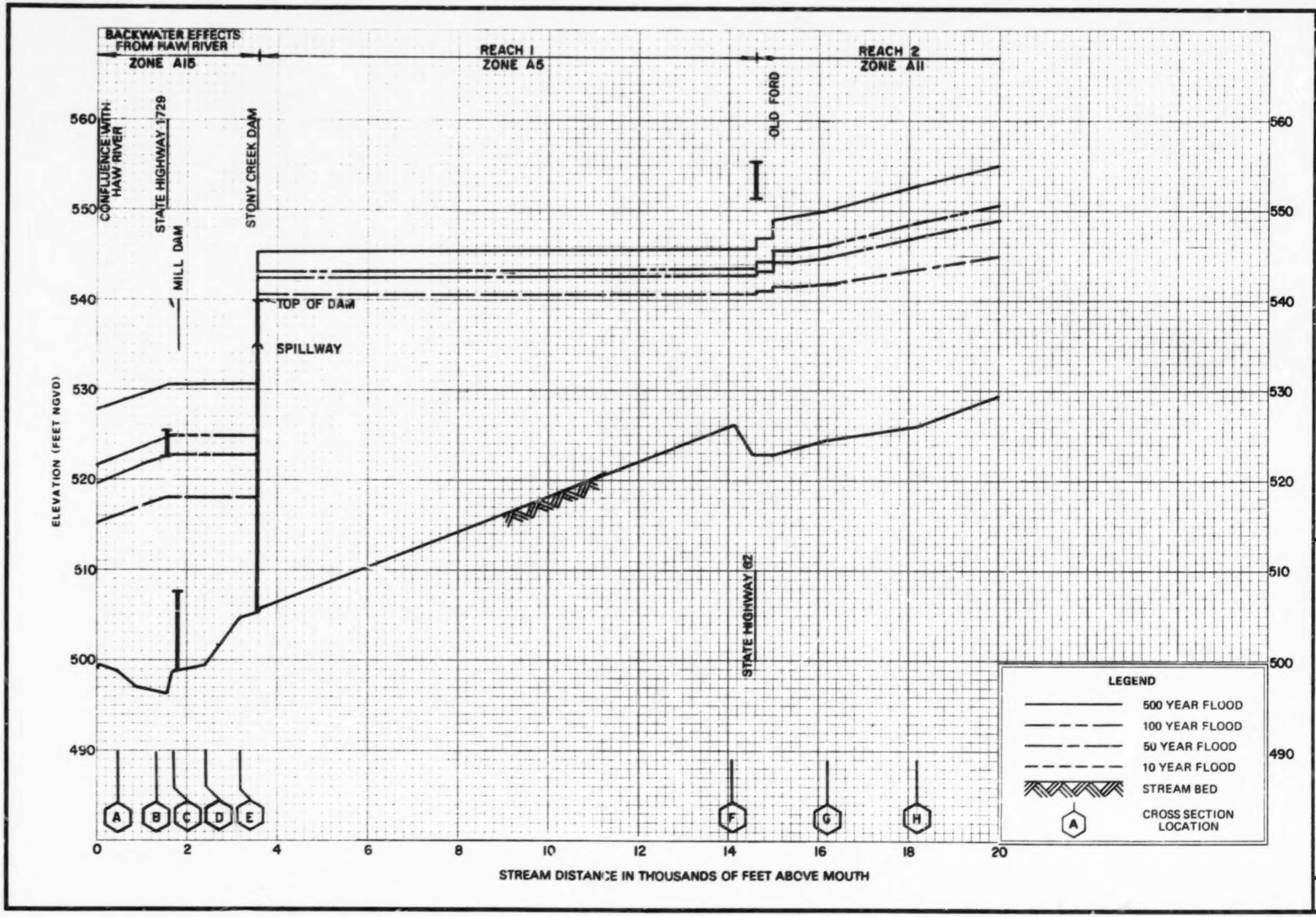
72



FLOOD PROFILES

STONY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

33P

73

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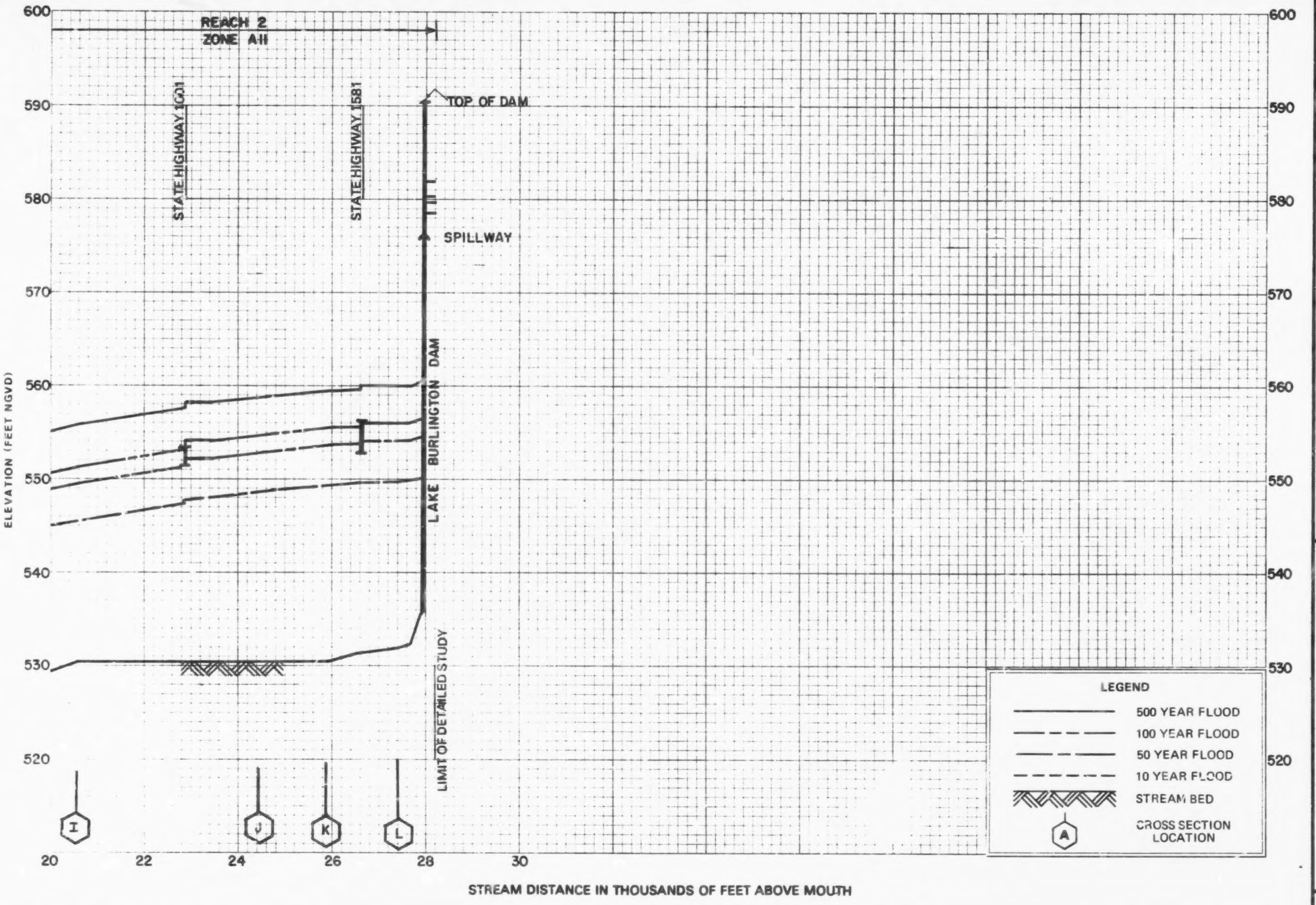


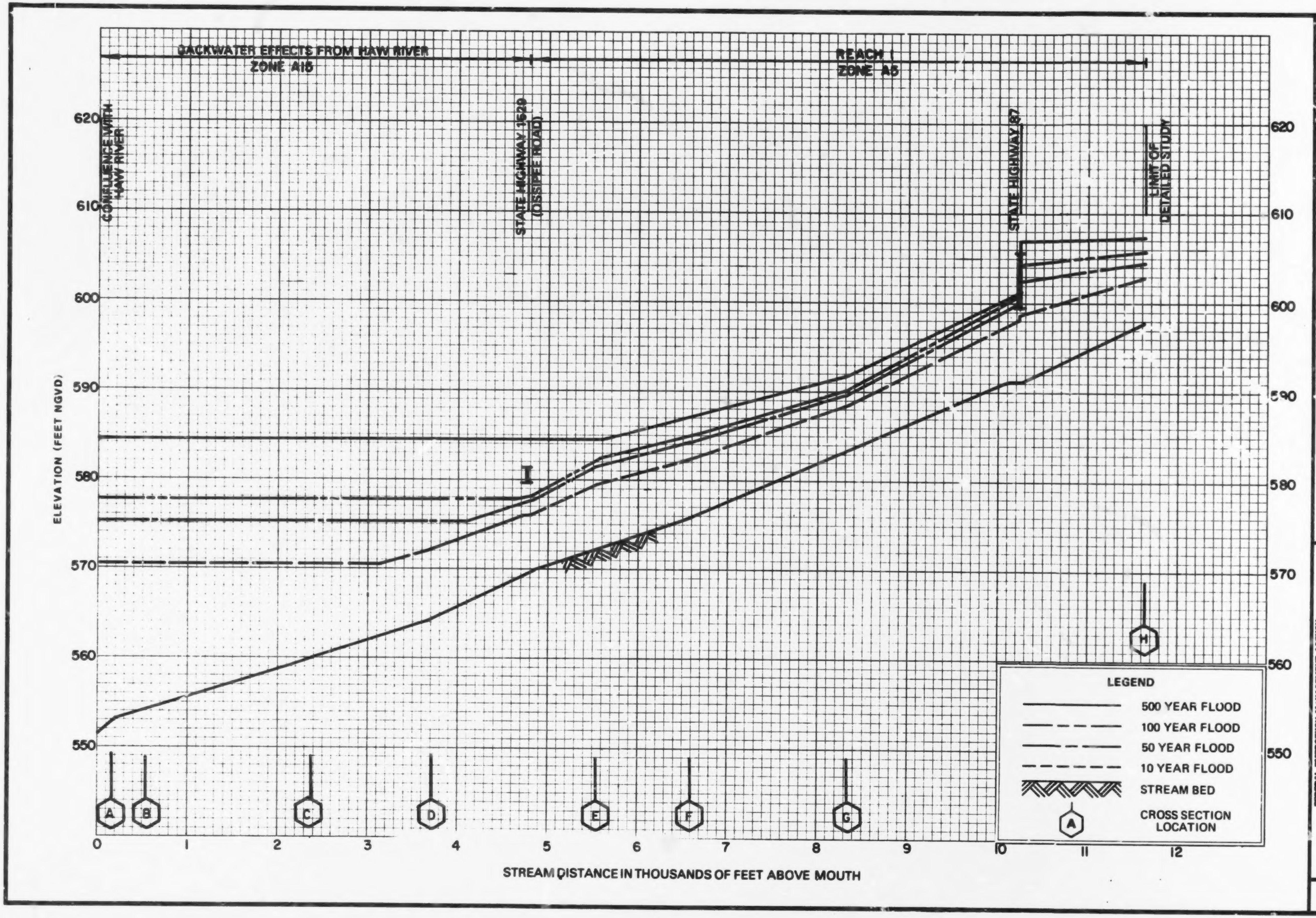
FLOOD PROFILES

STONY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)



FLOOD PROFILES

DRY CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

35P

75

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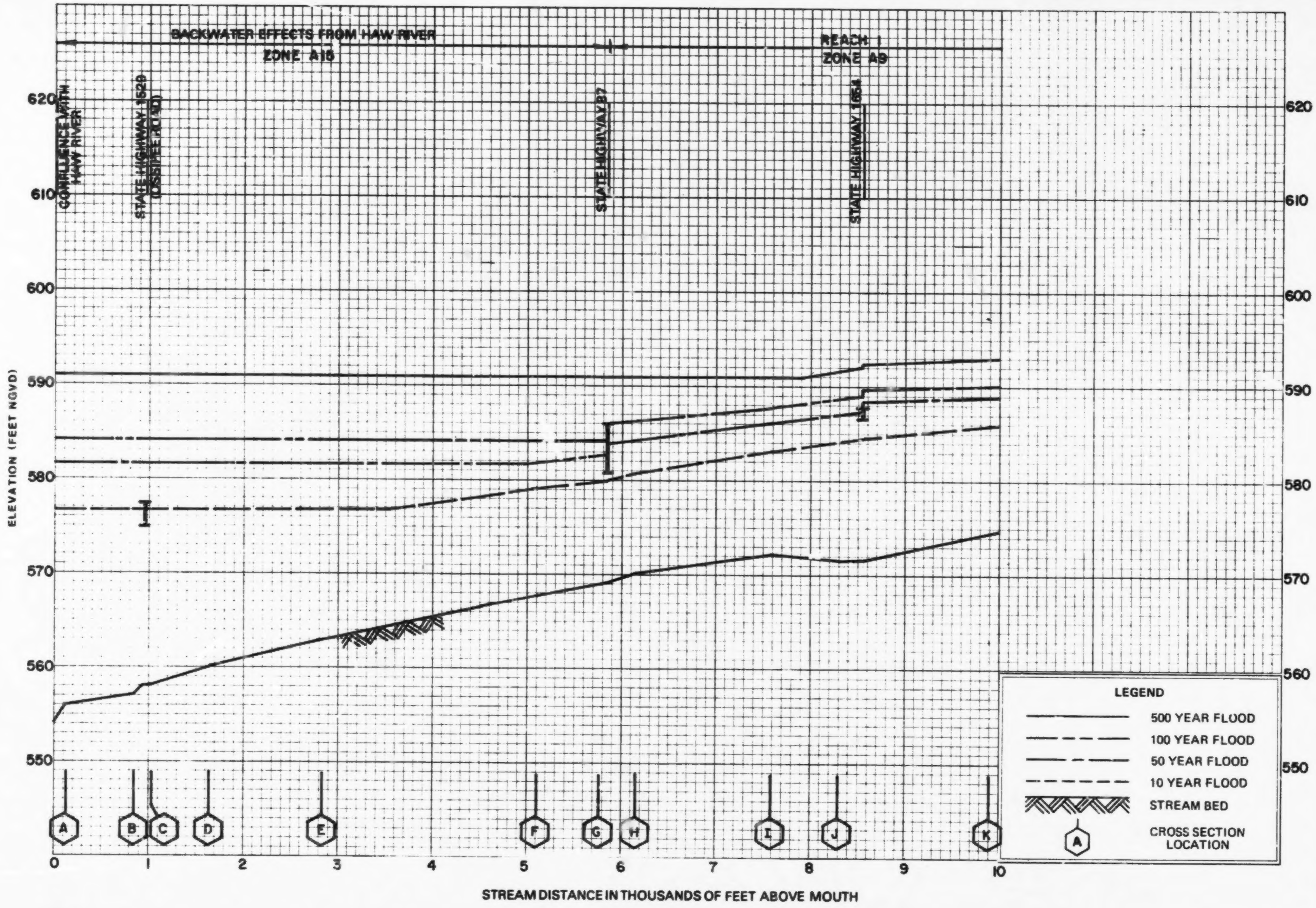

FLOOD PROFILES

TRAVIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

36P

76

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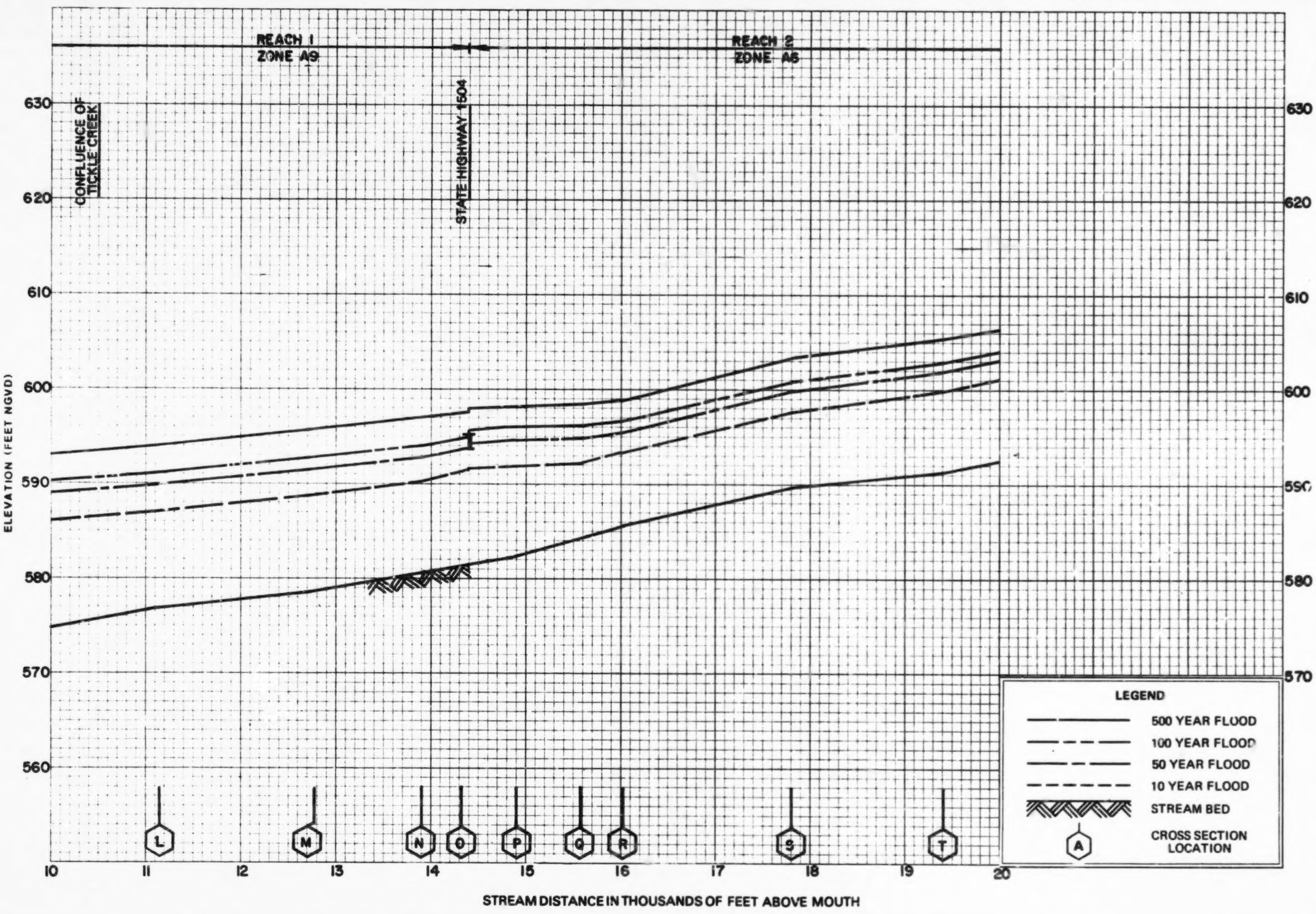

FLOOD PROFILES

TRAVIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

37P

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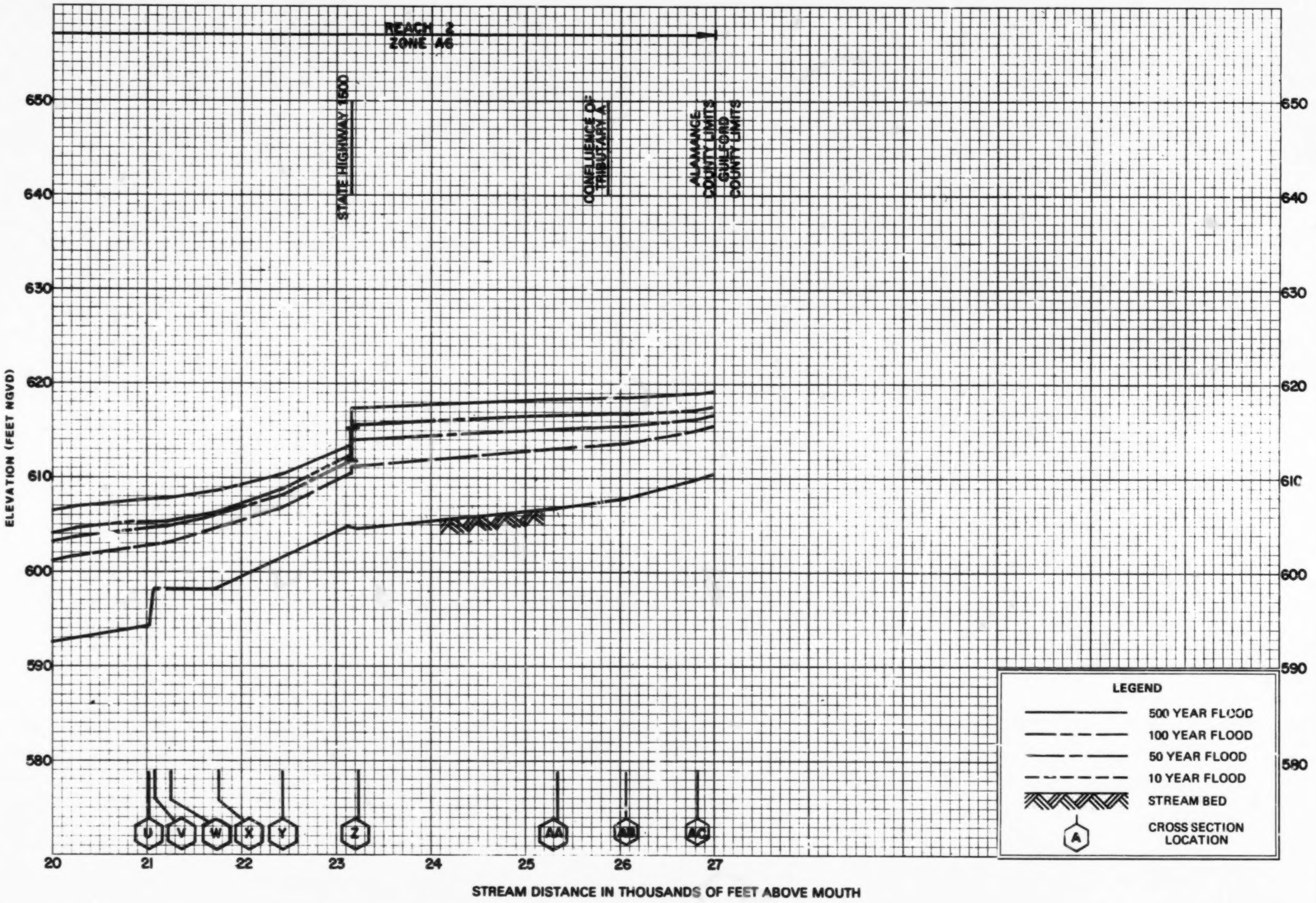

FLOOD PROFILES

TRAVIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

38P

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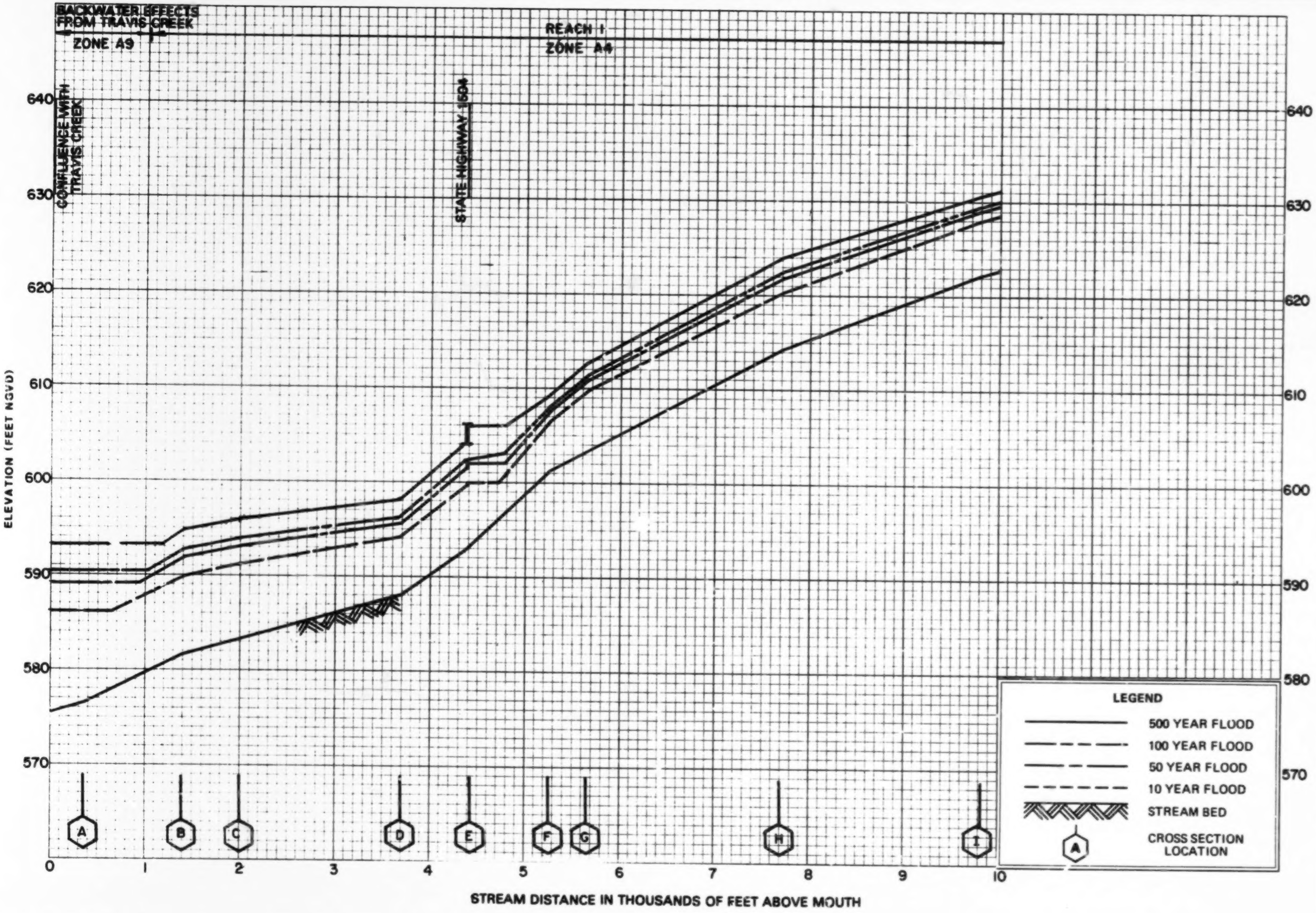
78



FLOOD PROFILES

TICKLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC
(UNINCORPORATED AREAS)

39P

77

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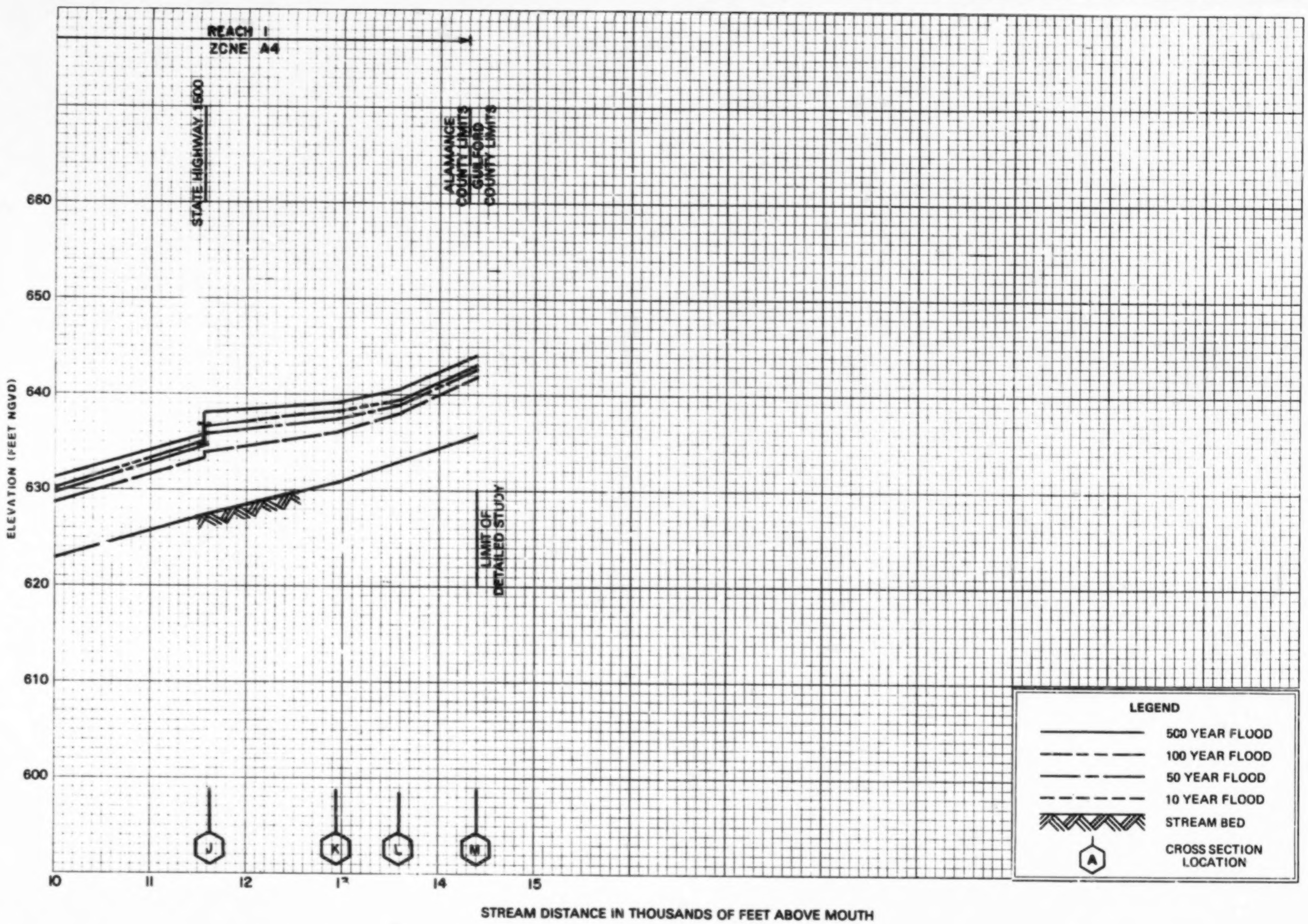

FLOOD PROFILES

TICKLE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

40P

80

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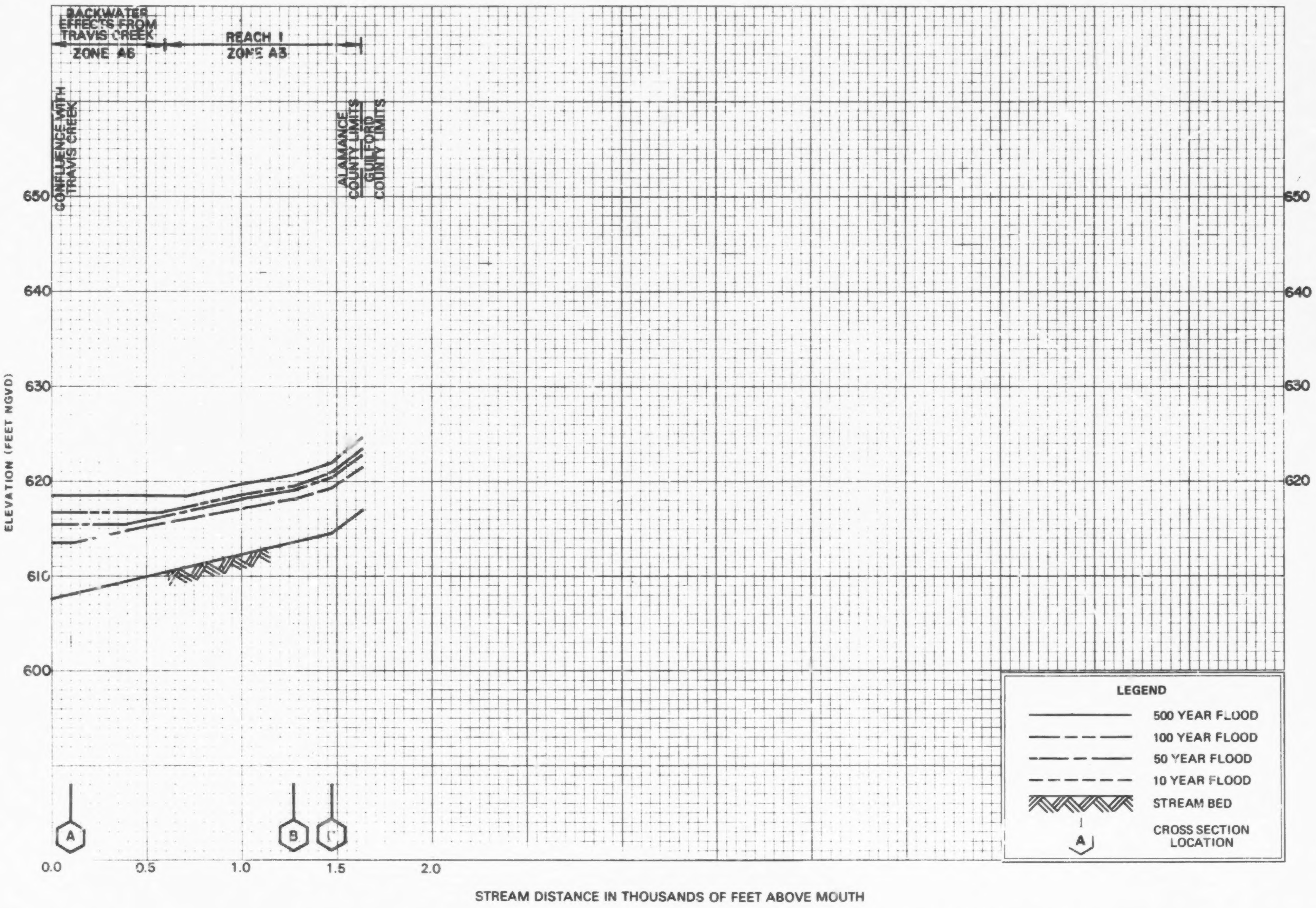

FLOOD PROFILES

TRIB. 'A' TO TRAVIS CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

81

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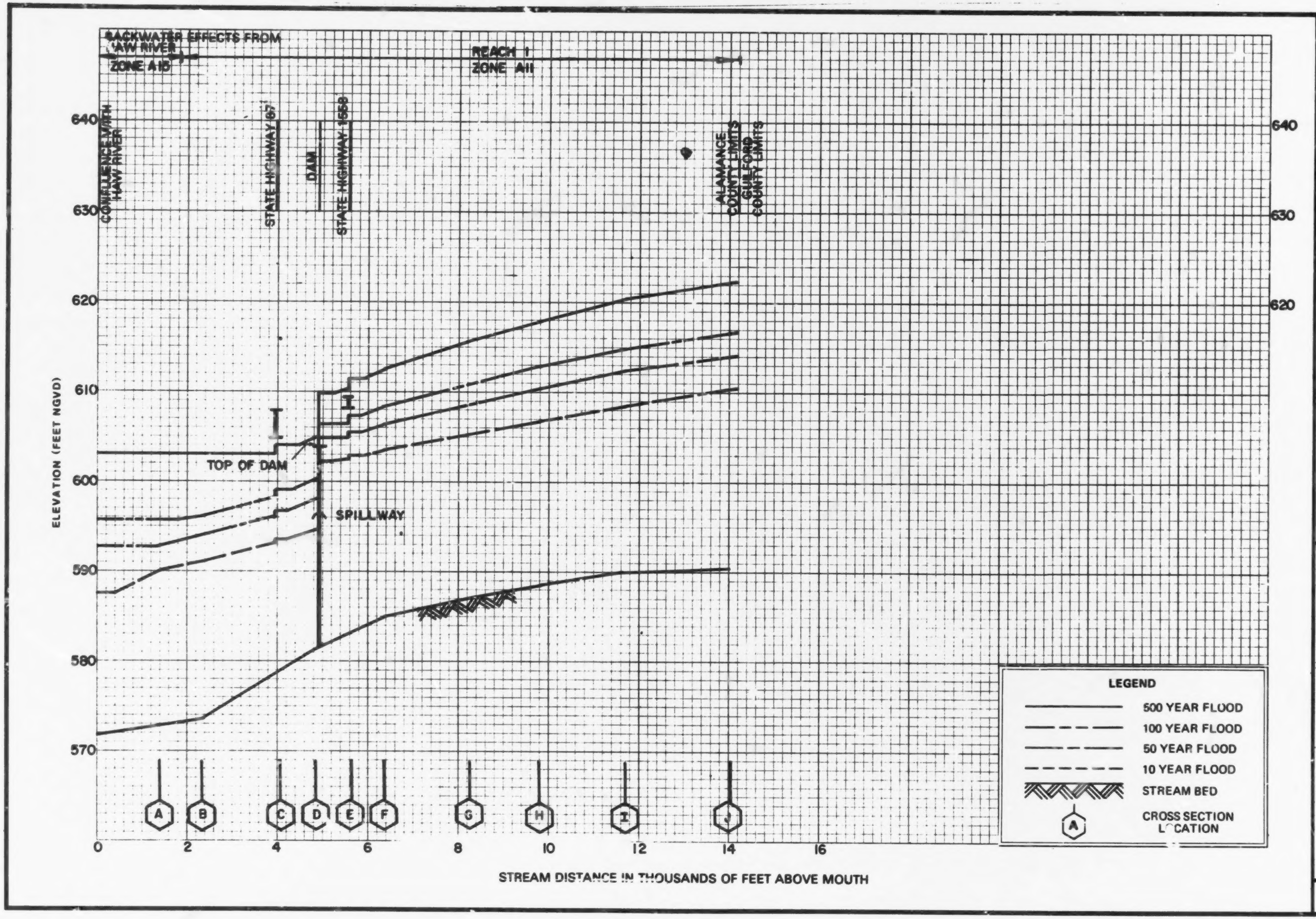

FLOOD PROFILES

REEDY FORK

FEDERAL EMERGENCY MANAGEMENT AGENCY

ALAMANCE COUNTY, NC

(UNINCORPORATED AREAS)

42P

82

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